VOL. 7, No. 10 OCTOBER 1953

CHRONICLE OF THE WORLD HEALTH ORGANIZATION

CONTENTS

	Page
First World Conference on Medical Education	271
World health and economic development - *Pierre Dorolle*	274
Colombian campaign against malaria and yellow fever	280
Maternal and child health demonstration in Taiwan	282
Exchange of personnel for the advancement of health	283
Necrology : René Sand	285
Report of Expert Groups	
The community mental hospital	287
Mental health aspects of adoption	289
Leprosy	291
Review of WHO Publications	
Comparative study of health legislation : nursing	292
World directory of medical schools	294
Views on WHO	
A tribute to Dr. Chisholm	295
National Citizens Committee for WHO	296
International Non-Proprietary Names	297

SCHEDULE OF MEETINGS

5-10 October	**Expert Committee on Alcohol, Geneva**
9-22 October	**Regional Committee for the Americas, fifth session, Washington, D.C.**
12-17 October	**First Conference of National Committees on Vital and Health Statistics, London**
19-29 October	**Joint FAO/WHO Third Regional Nutritional Meeting for Latin America, Caracas**
19 October-7 November	**Committee on International Quarantine, first session, Geneva**
20 October-13 November	**Joint FAO/UNICEF/WHO Group Training Course on the Control of Milk Quality and Processing, Rome**
26-31 October	**Expert Committee on Biological Standardization, seventh session, Geneva**
26-31 October	**Symposium on Insect Control (Regional Office for Europe), Rome**

PRINTED IN SWITZERLAND

FIRST WORLD CONFERENCE ON MEDICAL EDUCATION

The First World Conference on Medical Education, which took place in London from 22 to 29 August 1953, was sponsored by the World Medical Association in collaboration with the World Health Organization, the Council for International Organizations of Medical Sciences, and the International Association of Universities. Approximately 600 participants from more than fifty countries gathered to discuss the many problems of undergraduate medical education, to compare notes and exchange experience on how to adapt the teaching and training of medical students to the needs of a rapidly changing world. In the words of Sir Lionel Whitby, President of the Conference, " The world has now become so shrunken, because of modern communications, that we can no longer take a parochial view of our problems, whether they be economical, political, social, or, above all, medical, since medicine mercifully knows no international boundaries and happily has the same ideals in all countries ". Notwithstanding the same medical ideals in all countries, it was also realized that there is no universal or uniform answer to the medical educational problems of all countries. In his welcome address, Dr. M. G. Candau, Director-General of the World Health Organization, said :

" We in the WHO realize that one of the best ways to help countries improve their health services is to assist them in forming a highly competent body of professional health workers, among whom the members of the medical profession naturally occupy a leading and undoubtedly responsible position. The mere importation of such health workers is no more than a short-term and partial solution of the problem. While the physician must acquire the tools which modern science provides, he must also be prepared to work within the cultural and sociological framework of the country which needs his services. In the end, every country must develop its own medical education facilities, adapting the patterns and experience of others to its own needs, and not merely copying them."

After the initial plenary session, the Conference dealt with the following problems in four different sections, each presided over by a Conference Vice-President :

Section A : Requirements for entry into medical schools—Dr. Victor Johnson, Mayo Foundation, USA;

Section B : Aims and content of the medical curriculum—Sir A. L. Mudaliar, Vice-Chancellor of the University of Madras, India;

Section C : Techniques and methods of medical education—Dr. A. Hurtado, San Marcos University, Lima, Peru;

Section D : Preventive and social medicine—Professor A. Stampar,[1] University of Zagreb, Yugoslavia.

The question as to whether and how medical students should be selected gave rise to illuminating controversies, with some advocating certain procedures with as much conviction as others were ready to oppose them. The value of aptitude tests and personal interviews was seriously challenged.

There was practically consensus of opinion on the necessity of measures to prevent the undergraduate curriculum from becoming too overloaded by a continuous addition of new specialties, and the opinion seemed to prevail that the medical graduate should have acquired in the course of his undergraduate training a thorough knowledge of the fundamental principles of medicine and sufficient factual knowledge and training to enable him to continue his (postgraduate) training with equal ease either in the direction of general medical practice or in any of the medical specialties.

The particular needs of undergraduates in the underdeveloped countries were stressed by Dr. Edward Grzegorzewski, Director of the Division of Education and Training Services of WHO. He called attention to the fact that

> " the role of practically any doctor in a less-developed community is not an exclusively technico-medical one. By virtue of his education, of his social position, and his individual approach to persons and problems, he is bound to become one of the few cultural leaders of the community. In half the world, whether he wants it or not, he has to assume some functions of leadership . . . He should, therefore, be prepared for this role of leadership during his studies . . . He must receive this preparation in his medical school by example, by orientation, by the spirit of the school and its leaders."

Some very noteworthy experiments in medical education were reported. For example, at the University of Birmingham, fine results have been attained by combining the courses in anatomy and physiology, with the Chairs of both anatomy and physiology participating in the teaching of the course. Other ideas along similar lines, aiming at various departments' co-operating in the teaching of particular courses, may eventually provide one of the answers to the general demand for better co-ordination and integration in undergraduate teaching, at the same time keeping the length of the undergraduate teaching period within reasonable limits.

Considerable interest was shown in the use of various teaching techniques. The value of having medical students witness complicated surgical operations, for instance, was seriously questioned. A great deal was said in favour of using teaching films in almost all subjects, it being understood that they should be judiciously selected and devised along sound educational lines.

Throughout all the discussions there was an obvious awareness of the need to pay particular attention to the preventive and social aspects of

[1] Professor Stampar replaced Professor René Sand, whose illness prevented him from attending the Conference and news of whose death during the week of the Conference was received with much sorrow. (See page 285 of this number of the *Chronicle*.)

medicine in the teaching of undergraduates. These trends were, naturally, particularly emphasized in the section dealing specifically with preventive and social medicine. Whereas the need for such reorientation was unchallenged, the practical steps to be taken by the medical schools towards that goal were less clearly defined. There are considerable differences among countries and schools within countries as regards the teaching of preventive and social medicine. However, as Dr. Grzegorzewski pointed out, " The diversity and the changing content of the curriculum in the subject of social and preventive medicine is quite a natural phenomenon because it should and does reflect the changing role of various pathogenic and other factors as well as the evolution of the biological and social environment ".

The First World Conference on Medical Education was a most encouraging experience, and its influence will, no doubt, be felt in many schools and countries in years to come. The main trends of thought of this Conference were clearly in line with the ideas expressed in the reports of the WHO Expert Committee on Professional and Technical Education.[2] It is hoped that continued co-operation in the future between international, governmental, and non-governmental organizations in the field of medical education will yield further beneficial results.

WHO actively participated in drafting the programme of the Conference, and two of the Vice-Presidents, to preside over one Section each, were chosen from members of the WHO Expert Advisory Panel on Professional and Technical Education : Sir Arcot L. Mudaliar of Madras, India, and the late Professor René Sand of Brussels, Belgium. Provisions were also made for two more members of the Panel to attend the Conference in the capacity of consultants : Professor Dr. A. Stampar of Zagreb, Yugoslavia, and Professor Min Sein, Dean of the Medical Faculty of the University of Rangoon, Burma.

[2] See *Wld Hlth Org. techn. Rep. Ser.* 1950, **22** and 1953, **69**.

Vital Statistics and Causes of Death

General vital statistics of selected countries for 1951, 1952, and, in some cases, for the early months of 1953 are presented in tabular form in a recent issue of the *Epidemiological and Vital Statistics Report*.[1] The tables include natality-rates and general mortality-rates for more than forty countries or territories for these years; and, where possible, median rates for the period 1928-38 are also given. These are followed by tables on causes of death, listed according to the Abridged International Statistical Classifications of 1948 and 1938: first, actual numbers according to sex, and, secondly, rates, also by sex. Mortality from certain causes—actual numbers and rates, by sex—according to the International Detailed List of 1948 are also presented, as well as cases and deaths from relapsing fever.

[1] *Epidem. vital Statist. Rep.* 1953, **6**, 159-202

WORLD HEALTH AND ECONOMIC DEVELOPMENT *

Dr. Pierre DOROLLE

Deputy Director-General of the World Health Organization

How does the World Health Organization contribute to economic development ? Let me introduce my answer to this question by quoting the definition of the word " health " as it has been agreed upon by the 83 countries that have accepted the WHO Constitution. " Health ", according to that Constitution, " is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity ". From this definition it is clear that the World Health Organization could never be satisfied just to help countries in the fight against disease : it must also contribute to the struggle for health. . . .

The acceptance of this definition of the word " health " by more than 80 governments throughout the world clearly means a considerable widening of the traditional scope of public-health work. . . . WHO's definition carries the implication that public health, on the one hand, and economic progress, on the other, are closely related to one another. It says, in effect, that the state of a community's health is intimately bound up with the level of its social and economic development.

As far back as the beginning of 1949, the Executive Board of the World Health Organization transmitted to the World Health Assembly a programme and budget. . . . including a ten million dollar supplemental programme which was, in fact, a technical assistance programme. This programme was based on co-operative projects of advisory and demonstration services, with special reference to underdeveloped and undeveloped areas. . . . Before WHO could start implementing this programme, the United Nations established the Technical Assistance programme, and our Assembly then decided to join in the new common enterprise. . . .

Very many of WHO's projects are specifically designed to help break the age-old vicious circle of " poverty-breeds-sickness; sickness-breeds-more-poverty ". For the simple fact is that, without radical improvement in health conditions, all our grandiose schemes to raise agricultural and industrial productivity in the underdeveloped countries will be dangerously handicapped, if not doomed to certain failure.

It is well known that the agricultural yield of many large and potentially rich farming areas in many parts of the world is held to a pitiful minimum by a whole gamut of preventable diseases which sap the strength of the farmers.

* Extracts from an address given at the Sixth Congress of the International Federation of Business and Professional Women, Stockholm, July 1953

When the health of the farmer is improved, his productive capacity rises sharply. The result is that increased income from the land makes possible greater investment both in health work and in agricultural improvement.

This also has important implications for industrial development. Large-scale industrialization would appear to have as a prerequisite the presence of a relatively healthy population. If the people of an area are not, on the whole, fairly healthy, then migration to the cities tends, with the growth of industry, to leave only the dregs of a partially sick and overworked population to till the fields; and the vicious circle of " sickness-breeds-poverty-breeds-more-sickness " will inevitably recommence.

Thanks to the research carried out during the past few years, . . . we are today in possession of a variety of evidence tending to show the crippling effects of ill health on the development of society. In fact, many large-scale health campaigns which have been carefully analysed from this point of view yield concrete proof of the economic value of preventive medicine. . . These investigations show that sickness imposes an enormous burden on our economic structure. But sickness is not alone in robbing us of much of our wealth : premature death is also one of the biggest thieves. It is quite clear that, if an individual dies at the age of 15 years, there is a net economic loss to society because that individual has not yet begun to contribute his share to the productive processes on which the maintenance and growth of society depend. A life lived to the age of 40 means, on the other hand, a potential economic gain; and if death does not come until 65 years, there is a net economic gain about twice as great as in the case of the man or woman who dies at 40. . . . nearly two-thirds of the population of the world have a life-expectancy of only 30 years, as compared with the average of 63 years for northwestern Europe, North America, Australia, and New Zealand.

These facts alone show how important to the world's economic well-being are the efforts which governments, with the assistance of the World Health Organization, are directing towards the saving of human life, towards raising the life-expectancy of as many of their people as possible.

Let us turn now to a few examples which will show the toll exacted from our economic resources by preventable sickness. The economic value of antimalaria projects, for instance, can best be gauged by what has happened during the past several years in Greece and India.

In Greece, in 1943, there were 2,000,000 malaria-sufferers. The country was at that time buying one-fifth of the entire world output of quinine at a cost of approximately $1,300,000. But by 1949—just six years later—malaria-control measures, costing a million dollars less than the price that Greece once paid for quinine alone, had cut down the sickness figure to 50,000. This was about one-fortieth the number of cases there had been in 1943, and the effect on the country's economy was to increase its total manpower by the equivalent of 150,000 persons per year.

Take another example—this one from the Tarai and Bhabar areas of

northern India. Here, modern malaria-control measures on a wide scale were begun a little over three years ago. Already the production of food-grains is up by 25%, while the value of the land has nearly doubled.

Or take Sardinia, where malaria has for many years been the only barrier to rich agricultural development. A vigorous control campaign was launched in 1946. Three years later, in 1949, there was not a single case of primary malaria to be found on the entire island. And today a plan is under way in Italy for settling in Sardinia one million citizens from the overcrowded mainland.

Malaria is undoubtedly the major barrier in the way of increased agricultural productivity in most warm countries. But similar figures could also be given to illustrate the disastrous impact of other preventable diseases on economic development. . . .

According to an estimate made by Sir Andrew Balfour some years ago, there were at the time about 45 million workers in India suffering from hookworm disease. The annual earnings of these workers amounted to the equivalent of around one billion dollars. An intensive control campaign in one district was estimated to have increased labour efficiency by over 25%. Even if this figure were placed at only 10%, the application of a similar programme to the whole of India would have increased production rates by almost a hundred million dollars annually.

In Latin America, where the Pan American Sanitary Bureau has been leading the international fight against disease, there have been some remarkable economic advances made in regions where urban yellow fever has been brought under control.

Another disease, prevalent in most of the underdeveloped areas of three continents, under tropical conditions, is yaws. It is a crippling disease caused by a treponeme, very similar to the treponeme that causes syphilis, but its transmission is not venereal, and it affects large groups of the population in rural areas. It responds to treatment by penicillin, in one single injection of an appropriate dose. WHO, with the aid of UNICEF, and through both its regular and its technical assistance programmes, has helped in the control of yaws in several countries, notably in Haiti, Indonesia, the Philippines, and Thailand.

Operations in Haiti, for instance, started in 1950. It is now possible to test how far the results of earlier work in this project have been permanent and to compare the effectiveness of different methods of work. In an area where the treatment was given by a mobile clinic, it was found recently, in a sample examination of nearly 13,000 persons, that only 100 were infected with yaws. In another area, where treatment had been given by house-to-house visiting, at no greater cost in money or personnel, no cases were found among the 2,500 persons examined. It is estimated that to date the control programme has meant the return to work of about one hundred thousand incapacitated persons, and has thus increased the national income

by several million dollars a year. In Haiti, Indonesia, the Philippines, and Thailand, 1,575,000 persons have been treated. At a relatively low cost the result has been an immense increase in national manpower and income.

Another example is bilharziasis, a disabling disease caused by a parasite generally conveyed to man by certain species of water snail. These snails can live and multiply in irrigation ditches. Attempts to increase cultivation and production by irrigating new land may therefore spread disease and incapacity so that the second state is worse than the first—if proper precautions are not taken.

There is, for example, the Jezireh area of Syria, which was formerly a main food-producing area of Asia Minor. Disease and the choking of irrigation channels gradually depopulated the area. The tendency is now being reversed, and the Government is actively resettling the region. There is no doubt of the importance to the economy of Syria of the rehabilitation of this region. Bilharziasis is present there and.... with help from Technical Assistance, work is being started to make sure that this development is not nullified by the spread of bilharziasis.

A pilot project against bilharziasis is also in progress on the island of Leyte, in the Philippines. A control scheme in Egypt, particularly to study the effectiveness of new chemicals that have been developed to kill the snails with the minimum of risk to other animals, is under way; and surveys are proceeding in Africa and the Near East to determine the distribution and degree of bilharzia infection. In the meantime, research continues to find more effective ways of controlling the snails that carry the disease.

The aim of such activities is directly related to economic development. This correlation works in both ways : On the one hand, the control of bilharziasis increases the manpower in areas where the disease has, in the past, disabled a high percentage of the rural population. On the other hand, in countries where large irrigation schemes are planned in view of increasing agricultural production, these irrigation schemes may introduce bilharziasis which could, unless preventive measures are applied in time, impair the economic benefit resulting from the irrigation scheme.

Turning now to diseases which, unfortunately, are not restricted to certain climatic conditions, but are practically universal.... nobody needs to be convinced of the economic losses caused, for example, by tuberculosis or the venereal infections in both agricultural and industrial communities of the most developed countries....

The examples I have given show, I believe, how important is the role which health work can play in any scheme aiming at the improvement of general living standards.... The various types of aid extended to countries by WHO make it easier for them to control malaria, tuberculosis, the treponemal infections, and a host of other communicable diseases.

True to its understanding of health in the broader sense, the World Health Organization is also engaged in many technical assistance projects

which, more than merely attacking disease, are designed to bring to the underdeveloped countries a knowledge of modern methods used in the promotion of positive health. These concern especially such subjects as mother and child health, environmental sanitation, nutrition, mental health, public-health nursing, and health education of the public. All of them are conspicuous among the fields in which 74 governments have requested Technical Assistance. WHO has given the advice of 472 experts and awarded 555 fellowships. . . .

The efforts of WHO are focused on this point : to train adequate personnel, by helping national institutions, by assisting countries in establishing demonstration and training centres, by granting scholarships and fellowships. This applies to all kinds of health workers. For there is a need in the great majority of countries not only for doctors, but also—and even more so—for the type of personnel usually called " auxiliary ", but which I should prefer to call " fundamental " . . . the nurses, the laboratory technicians, the health visitors, etc. . . .

Nursing training is. . . . a major concern of our Organization. . . . WHO is assisting six Governments (Cambodia, Indonesia, Iran, Lebanon, Syria, and Thailand) in the establishment of nursing departments within the national health administrations and is providing fellowships for national nurses to prepare for the direction of these new departments. At the same time, WHO is providing international nursing advisers to assist the national health administrations with this task. New legislation for the protection of nurses is being prepared in Lebanon, Syria, and Turkey. The revision of existing legislation is under review in a number of other countries. With the assistance of WHO, new schools of nursing for women of secondary school education are being established in Ceylon, India, Malaya, Syria, and Turkey. . . .

I have still to mention what may well be regarded as the most typical feature of WHO's Technical Assistance programme : the health demonstration areas. These projects—and there are more and more of them being launched—provide for the combined use of a wide variety of techniques and specialities which may be required in solving the critical health problems of a given area.

The health demonstration areas are symbolical of the very concepts on which WHO's work is based, both in its regular programme and in the Technical Assistance programme. The term " demonstration " points to the essential nature of its task. Its functions are chiefly advisory. WHO was created to help countries to help themselves. It is a sort of international co-operative for mutual aid in health improvement. The World Health Organization can do no more—and was never intended to do more—than to mobilize all internationally available means and to help individual countries to learn how to employ these means in order to cope with the health problems they face in their varying stages of development. Once this

demonstration phase is completed, the health workers of the country being assisted will carry on with the job.

The most vitally important lesson which WHO has learned, and is teaching, is that effective health work can be carried out only within the framework of a sound and orderly system of public-health administration. This explains the relatively large number of projects through which WHO is attempting to contribute to the establishment, or strengthening, of modern health administrations. This also confirms the importance given by WHO to projects for the education and training of local health workers. . . . the World Health Organization fully recognizes that without the solid foundation provided by strong national health administrations, or without the required numbers of adequately trained staff, all health work—however spectacular it may be in the early stage—will fail ultimately to raise health levels and so may easily lead to a slowing-down rather than to the desired speeding-up of general economic and social development.

Finally, the health demonstration areas or projects are, in my opinion, among the most promising examples of the type of co-operation which must be obtained—and maintained—among the United Nations and all its specialized agencies if our programmes of assistance to the economically underprivileged countries are to succeed. . . . Whatever our temperament, previous experience, or personal likes and dislikes may be, we can no longer afford the luxury of working independently in our respective fields without considering the overall task which is the great challenge of our age : to lay the foundations for a world in which all people will share in the great benefits which can be derived from our present and growing understanding of the forces of Nature.

Nothing will be achieved by restoring good health to millions of human beings if, due to lack of capital investment, they only swell the ranks of the unemployed and add to the economic burden which their communities already bear. Conversely, no amount of money will be able to stimulate agricultural and industrial development effectively if the men and women for whom new opportunities are thus created continue to be plagued by physical and mental ills. And, finally, unless endowed with the intellectual and moral values which education and culture can bring, even a healthy and economically productive people cannot help to build a peaceful world. . . .

I believe that in the United Nations Expanded Programme of Technical Assistance lies mankind's greatest hope for the future. I believe this to be true precisely because this programme provides for a concerted frontal attack by the United Nations and all its specialized agencies on the problems of poverty, hunger, ignorance, and disease. . . . This is " the real battle for peace ".

COLOMBIAN CAMPAIGN AGAINST MALARIA AND YELLOW FEVER

In terms of people protected against malaria, an insect-control campaign organized by the Government of Colombia in 1952 has real meaning : eleven months after operations began, it was recorded that protection had been given to 1,225,000 persons. This achievement is the result of a co-operative effort of the Government, UNICEF, and WHO. The Government is meeting 80% of the total cost of the project, UNICEF is providing supplies and equipment, and WHO is contributing specialized personnel.

The Colombian insect-control campaign forms part of a developing programme of insect control in many countries of Central and South America, aimed at eliminating malaria as a major health problem and at ridding the continent of *Aedes aegypti*, vector of yellow fever.

Malaria represents an obstacle to the economic development of Colombia. It is estimated that 700,000 persons suffer from this disease annually. A survey of the problem, made in recent years by the Division of Malariology of the Ministry of Health, revealed that the malarious areas range from sea level to an altitude of 1,700 m, and are inhabited by a population of 6,800,000. Because of this disease, vast and naturally rich areas in the tropical and subtropical regions have been depopulated. The Government had carried out limited malaria-control campaigns, but it was unable to undertake efforts of the scale of the present project until international aid became available.

Attention was first centred chiefly on the Departments of Atlantico, Magdalena, and Bolivar, along the north-east coast of the country—a region of 117,000 km² with a population of two million. Between April 1952 and February 1953, 205,000 houses, in 1,777 communities, were sprayed with DDT. Among the localities where no *Aedes aegypti* were found after the spraying had been done were the two most important ports of Colombia : Barranquilla and Cartagena. Constant vigilance is required to assure the results already obtained. Re-spraying and surveys must be carried out in the areas already covered, while the spraying is extended to new localities. According to the progress reports, " operations are proceeding on schedule and results attained so far are good ".

WHO has given technical advice on this project from its earliest planning stage. The Brazilian National Yellow Fever Services seconded to the Organization the services of Dr. Vincent Pinto Musa, who is helping to organize the campaign; two sanitary inspectors from the Service are also on loan to WHO for this work. Thus, the skills and experience gained in one country are utilized to aid another; in this instance, the link is close, since Brazil has successfully achieved, under similar conditions, the goal now sought by Colombia.

The task of organizing the campaign is considerable; at one time there may be as many as 29 spraying teams at work, each with its contingent of

labourers, a crew leader, equipment and supplies, and transport suitable for a jungle country. Technical control is maintained through surveys and laboratory observations.

WHO has agreed to continue to furnish technical personnel through 1954, to advise the Government on the planned expansion of the campaign and to train Colombian technicians who will be responsible for directing the work once international aid has been withdrawn.

Insect control in Colombia is essential for the development of the country. It will make more manpower available and will open up new areas for agricultural or industrial development schemes. Other international agencies are also giving assistance : FAO is advising the Government on plans for agricultural production and has recommended land surveys as a preliminary step to the colonization of large uncultivated areas. Similarly, the United Nations Technical Assistance Administration and ILO are providing advice on problems relative to the industrialization of the country. All these developments are dependent upon healthy surroundings, which, in turn, are partly dependent upon the eradication of the insect vectors of malaria and yellow fever.

Maternal Care and Mental Health *

Dr. Bowlby's report, originally published by WHO in March 1951,[1] has proved to be one of the most widely-acclaimed numbers to have appeared so far in the Monograph Series. With two editions and seven printings in English, and two printings in French, the total number of copies published now exceeds 15,000.

The report has been extensively reviewed by both the specialized and the general press. That this book has been considered as an important and pertinent contribution to the solution of one of the world's gravest problems can be deduced from a comment published in the *Medical Officer* : " . . . without doubt, Bowlby's monograph (written for WHO) is one of the most remarkable books of our time . . . " Its value to the specialist has been noted by a reviewer in the *American Journal of Psychiatry* : " . . . This is a report that I feel should be in the office of every child welfare agency, pediatrician, and child guidance clinic." The lay press has also paid tribute to it : in the words of the *Economist*, " . . . the report deserves to be as widely read and discussed as the recommendations of the Curtis Committee."

Børn uden hjem, a Danish-language edition of the monograph, has been issued by Munksgaard of Copenhagen; and Pelican Books have recently published an abridged version of the original report under the title *Child care and the growth of love*.

---

* *Maternal care and mental health. A report prepared on behalf of the World Health Organization as a contribution to the United Nations programme for the welfare of homeless children*, 2nd ed., Geneva, 1952. (*World Health Organization : Monograph Series*, No. 2.) 194 pages; price : 12/6, $2.50, Sw. fr. 10.— (clothbound); 10/-, $2.00, Sw. fr. 8.— (paperbound)

[1] See *Chron. Wld Hlth Org.* 1951, 5, 83.

MATERNAL AND CHILD HEALTH DEMONSTRATION IN TAIWAN

In 1952, the Government of China (Taiwan), with the aid of WHO and UNICEF, undertook to demonstrate " modern methods of maternal and child care within the economic and social resources of China (Taiwan) and in harmony with its cultural background, as an integral part of the national health services ". The Government selected the region of Taichung (population 665,000) as a demonstration area which was to include a 150-bed provincial hospital, 2 health centres, and 10 health " stations ". UNICEF agreed to provide equipment and supplies for both the hospital and the health centres and stations and made available $34,000 for that purpose for the first year. WHO contributed a professional team of three : a physician from the USA, a British nurse-midwife, and a Canadian public-health nurse. The Government of Taiwan provided a matching team, additional personnel for the expansion of health services, trainees, buildings and equipment, and other operational items estimated to cost $101,000.

Emphasis in this demonstration is on teaching the basic principles of midwifery and nursing techniques and on health education of the public. Home visits have proved to be a valuable means of health education, since a visit to one home is nearly always an occasion for a gathering of neighbours, thus making a group demonstration possible. WHO health education activities are also forming a part of other national and bilateral technical assistance work. Guidance in the preparation of visual aids has been given to WHO team members by a UNESCO consultant assigned to advise the Ministry of Health of Taiwan.

The Taichung City Health Centre has become the main unit for demonstrating midwifery. By early 1953, six carefully chosen nurse-midwife trainees had finished a four-month course, and another six had been selected to begin training. The trainees are expected to serve, in their turn, as teachers and supervisors, to make up a network of trained personnel throughout the demonstration area. The nurses have initiated mother and child craft classes, in which volunteer aid is playing an important part.

The demonstration is also being used for the field training of student nurses from the University Hospital in Taipeh, who come in groups for a month of training. WHO is assisting the nursing school of this hospital through the provision of four nurse educators.

The international team, working with national personnel, is endeavouring to get under way a programme which can be continued once international aid is withdrawn—probably at the end of 1954.

EXCHANGE OF PERSONNEL FOR THE ADVANCEMENT OF HEALTH

One of the more interesting features of the Technical Assistance programme is that it is giving the nations who are participating in it an opportunity to help each other through sharing technical personnel and training facilities. It is particularly noteworthy that many of the countries who are recipients of Technical Assistance are also contributors.

In Latin America, Brazil, which is receiving assistance, has medical specialists and technicians, trained in the national health service, working as WHO consultants in other countries of the Americas. In August 1953, twelve Brazilians were working in the Region, among them malariologists and sanitarians engaged in malaria control in Peru and the Dominican Republic, and a public-health engineer serving in Panama. Similarly, a Costa Rican venereologist was aiding the Government of Paraguay in venereal-disease-control activities.

Egyptian personnel are serving in several countries of the Eastern Mediterranean Region. For example, an Egyptian malariologist is working in Syria, and a team of two doctors and a nurse are demonstrating new techniques and are training personnel in a Saudi Arabian venereal-disease-control project.

The Philippines, which are among the recipients of Technical Assistance in the Western Pacific Region, are providing four specialists for activities in other countries of the Region. A public-health engineer is working in malaria control in Taiwan, and a nurse instructor is participating in a nursing education project in the same country. A third Filipino specialist is Professor of Applied Physiology at the University of Malaya in Singapore, and a fourth is serving in a venereal-disease-control demonstration in Burma. Two Chinese specialists are taking part in Technical Assistance activities outside their own country, one working in malaria control in Ceylon, and the other in yaws control in Indonesia.

European countries which are receiving Technical Assistance are also contributing personnel for work in other countries. A Spanish entomologist is a member of a WHO malaria team in Sarawak. From Finland are a physician working in maternal and child health in Afghanistan, an X-ray technician serving in tuberculosis control in India, and a nursing instructor who has just finished an assignment in North Borneo.

South-East Asian countries, too, are sharing technical personnel. A WHO consultant from Ceylon is aiding in malaria control in Indonesia, and another specialist from the same country is working in a WHO-aided maternal and child health programme in Thailand. Ten consultants of

Indian nationality are working in Technical Assistance activities in various countries, among them a venereal disease specialist in Afghanistan, a malariologist in the Philippines, and another malariologist in Iraq.

Of the 34 countries which are offering training facilities for Fellows selected in connexion with Technical Assistance, many are also those from which WHO field personnel are drawn. Brazil, Cambodia, China, Egypt, Finland, India, Morocco, Peru, Thailand, Turkey, Uruguay, and Venezuela have contributed, and are generally still contributing, to the programme by placing Fellows in their health institutions, or by making available the requisite facilities as host governments for regional or inter-regional training courses and demonstrations. Some of the institutes offering training in these countries have previously received assistance from WHO or other international organizations or foundations.

Regional training courses have been found the best means of meeting the need for training professional and subprofessional workers of various kinds : Ceylon, Egypt, and Japan have provided facilities for training courses in vital and health statistics, organized with the help of the United Nations and WHO; FAO and WHO jointly assisted the Indian Government in a training course in nutrition in 1951; and in 1952 a nursing instructors' course was organized by China (Taiwan) with WHO assistance.

WHO Needs Specialized Personnel

WHO is in almost constant need of specialized personnel for temporary assignments in connexion with field projects. Public-health training or experience is especially required for such posts. Further information concerning the types of personnel needed will be found inside the back cover of this number of the *Chronicle*.

Necrology

RENÉ SAND

Dr. René Sand, a pioneer in social medicine and one of those who participated in the founding of WHO and aided its development, died on 23 August 1953.

Dr. Sand was born in 1877. Following his graduation from the University of Brussels, he soon became interested in occupational hygiene. In 1907, he published an important work entitled *La simulation et l'interprétation des accidents du travail.*

In 1912, Dr. Sand founded the Belgian Social Medicine Association. After the First World War, he was instrumental in the organization of the International Conferences of Social Work. For some time he taught social medicine in Santiago, Chile. Later, he toured the world during a period of 12 years as Secretary-General of the League of Red Cross Societies.

In 1929, he founded the International Hospital Association. From 1936 to 1940 he was Secretary-General of the Belgian Ministry of Health. In 1939, he founded the Belgian Institute of Hygiene and Social Medicine, in which he organized a library devoted to these subjects. From 1934 to 1945 he was an active member of the Health Committee of the League of Nations.

During the Second World War, he remained faithful to his ideal and took an active part in semi-clandestine meetings concerned with social medicine.

In 1946, he presided over the meetings of the Technical Preparatory Committee appointed by the United Nations Economic and Social Council to study propositions concerning international action and organization in the field of public health. In the same year, he was appointed by the Belgian Government to serve as a delegate at the Health Conference held by the United Nations in New York to draw up the Constitution of the World Health Organization.

From 1946 on, Dr. Sand participated in many international meetings, among them the Special International Conference (Scheveningen, 1947) to consider urgent problems of war-devastated regions, the Fourth International Conference of Social Work (Atlantic City and New York, 1948), and the Fifth International Conference of Social Work (Paris, 1950), of which he was Honorary President.

From 1945 to 1952, Dr. Sand occupied the Chair of Social Medicine, created in the former year at the University of Brussels. He was one of those who was concerned with the reorientation of medical education according to the changes in the role of the doctor in society. In addition to his own teaching in the medical faculty at Brussels, he stimulated modern ideas about medical education in the meetings of the WHO Expert Com-

mittee on Professional and Technical Education, of which he was Chairman at its first meeting. He was an active member of the Expert Advisory Panel on the same subject and contributed to the discussions at the second session of the committee in 1952. During the last year of his life, he agreed to direct a special study, for which he was eminently qualified, on the functions and training of health and welfare visitors in some European countries. This study was just about completed when death struck him.

In addition to delivering numerous lectures in every country in Europe and writing hundreds of articles on questions more or less related to social medicine, Dr. Sand was the author of several major works : *L'organisation industrielle, la médecine sociale et l'éducation civique en Angleterre et aux Etats-Unis ; Réforme du service médical de la bienfaisance; Le service social à travers le monde : assistance, prévoyance, hygiène; La Belgique sociale; L'économie humaine par la médecine sociale; Un programme de santé pour la Belgique ;* and, most recently, *The advance to social medicine (Vers la médecine sociale)*, and *La médecine sociale.*

At the Fourth World Health Assembly, in 1951, the Léon Bernard Foundation Prize was awarded to Dr. Sand for his work in social medicine, that essential factor in human economy which Dr. Sand himself called " the new humanism ". In accepting this award, he concluded his address with an expression of his creed concerning the role of medicine in society :

" Neither students nor practitioners fully realize that, as Hippocrates already said long ago, in medicine the function of protecting and developing health must rank even above that of restoring it when it is impaired.

" If the nobility of medicine resides in the selflessness of the physician, the hygienist, and their assistants, its greatness resides in the scope of the services which they render; and, from this point of view, the medicine which preserves health has a considerably greater influence for good than the medicine which restores health." [1]

The Secretary-General of the Ministry of Health of Belgium, Professeur M. De Laet, said of Dr. Sand, " Over all [his] work reigns the beneficent atmosphere which gives life strength and balance and which comes with social conscience, that developed form of the spirit of charity, that turn of heart and of reason which enables man to live in harmony with his milieu." In the words of Dr. M. Mackenzie, Chairman of the WHO Executive Board, " René Sand was a great man and one who was deeply loved by many colleagues in every country of the world ".

[1] *Chron. Wld Hlth Org.* 1951, 5, 196

Reports of Expert Groups

THE COMMUNITY MENTAL HOSPITAL

The third report of the WHO Expert Committee on Mental Health [1] is devoted to the subject of the community mental hospital. It is pointed out that it is difficult to formulate general recommendations for the provision of psychiatric care since little exact information on the extent of psychiatric morbidity in various countries is obtainable. The report emphasizes the necessity of encouraging all countries beginning to develop their mental health services " to attempt to carry out, if necessary with the assistance of WHO, surveys of sample communities in order to arrive at a working estimate of the prevalence of psychiatric morbidity ".

Inpatient Services

In dealing with the essential mental hospital accommodation, the report states that, while it is impossible to lay down hard and fast rules concerning the number of beds to be provided for patients who, by virtue of their behaviour and their illness, must be segregated, a country, however underdeveloped, " which has less than one psychiatric bed per 10,000 of the population will be unable to provide even the crudest level of . . .'emergency psychiatric inpatient care' ".

Much attention is paid in the report to the " atmosphere " in the community mental hospital as an important factor in the efficacy of treatment. " Too many psychiatric hospitals," it is noted, " give the impression of being an uneasy compromise between a general hospital and a prison." The role of the psychiatric hospital is quite different from that of either of these institutions : it should be a kind of " therapeutic community ". Among the elements conducive to the creation of the needed atmosphere are the preservation of the patient's individuality, the assumption that patients are trustworthy and capable of undertaking responsibility and displaying initiative, and the encouragement of good social behaviour. " The life within the hospital should, as far as possible, be modelled on life within the community in which it is set."

Architecturally the mental hospital often shows the same influence of general hospital or prison. If it is to be a therapeutic community, it must be designed and planned as such. " If it is to support and recreate the sense of individuality in patients, it must not dwarf them by its size and by herding them together in thousands in giant monoblock buildings." Preferably, the hospital should be composed of groups of small buildings, spaced out in a natural area of woods, gardens, and farm lands. Each unit should be

[1] *Wld Hlth Org. techn. Rep. Ser.* 1953, 73. 38 pages. Price : 2/-, $0.25, or Sw. fr. 1.—. Published in English; French in preparation.

planned for a group of about 25-30 patients, and it should be assumed that the majority of them will sleep, eat, and work in comparatively small groups of up to ten persons.

Within the therapeutic community, activity is of fundamental importance. This activity should cover a range of occupational and psychotherapeutic group-activities in some of which each patient should participate. The formation of patients' clubs is valuable in creating the proper therapeutic atmosphere. Such clubs not only may serve as means of diversion but also may give rein to feelings of dissatisfaction caused by certain deficiencies in the hospital; for example, groups may be formed to negotiate with the kitchen or general services and may thus express aggressive tendencies which can be directed towards useful activity. Patients' clubs also have a function in welcoming the new patient and helping to initiate him into the conditions of hospital life.

Home care, institutions for aged patients, special hospitals, and psychiatric wards in general hospitals are considered to some extent in the report. Concerning the last, it is mentioned that " in much modern writing... it is taken as axiomatic that psychiatric wards in general hospitals are the most desirable form of provision for psychiatric medical care ", but that this is a view which the Expert Committee on Mental Health was unable to accept without reservation. " Too often the psychiatric wards of a general hospital are forced by the expectations of the hospital authorities to conform to a pattern which is harmful to their purpose." In addition, they " may prove very detrimental to the community mental hospital if they are the only portal of entry for patients into the latter. In such a case the general hospital may treat and return to society a high proportion of psychiatric patients capable of early recovery and send to the community mental hospital only those patients who are grossly disturbed, chronic, or of apparently bad prognosis. There is no more certain way of turning the community mental hospital into a ' madhouse ' and depriving it of its role of a therapeutic community."

Extramural Activities and Treatment

" Once the provision of beds for essential custodial care has been achieved, priority should be given to the development of psychiatric activities within the community which the hospital serves... It has been shown in highly developed communities that a considerable part of the time of the psychiatrist on the staff of a community mental hospital can fruitfully be spent on preventive and therapeutic work in the community..." Among the activities suggested in the report are the spreading of information to the public concerning the hospital itself and the nature of psychiatric illness, the development of mental health education within the community, and the study of both the mental health problems in the community and the

ways and habits of the community which are relevant to the solution of these problems. Close liaison between the psychiatric staff of the mental hospital and the other physicians in the community is urged, in order to bring the former into contact with the psychoneuroses seen by the family doctor as well as with the psychoses with which they deal in the mental hospital.

Such activities as the above should lead towards the setting-up of outpatient services. The report describes the way in which these services might develop and lists some of the types of cases which might be treated therein. Also described is the so-called " day hospital ", a recently developed means of treating psychiatric patients which, it is felt, " every community mental hospital should consider establishing ".

MENTAL HEALTH ASPECTS OF ADOPTION

The mental health aspects of adoption are the subject of a report on a joint UN/WHO meeting of experts convened to consider this problem.[1] The report aims to stimulate improvement of present adoption procedures—particularly those in Western society—through calling attention to principles of mental health which are fundamental to good adoption practice.

It is stated at the outset that " adoption is regarded as the most complete means whereby family relationships and family life are restored to a child in need of a family ", its main purpose being " to ensure the well-being of the child " and the satisfaction of the desire of childless people for children being a secondary consideration. The question then becomes one of providing an adoption situation which promotes the wholesome development of the child by assuring him " sustained parental care " and " the security of a family setting ".

Some of the factors to be considered in evaluating the ability of the adopting home and the prospective adopting parents to meet the child's needs are : (1) the quality of parental feeling in the adopting parents, (2) the quality of the marital relationship, (3) the age of the adopting parents and of the child, and (4) the presence in the adopting family of other children. With regard to the first factor, reasons for wishing to adopt a child may give an indication of the quality of parental feeling. The marital relationship which will provide the best atmosphere for the adopted child is a sound one " of mutual love and respect ". As for the age of the adopting parents, normality of family life is furthered when their age is about that of natural parents for the child; insistence that the adopting parents must be older than, for example, 35, 40, or 50 years is not in the best interests of the

[1] *Wld Hlth Org. techn. Rep. Ser.* 1953, 70. 19 pages. Price : 1/3, $0.15, or Sw. fr. 0.60. Published in English and in French.

child. The presence in the family of other children, whether natural or adopted, may provide a more normal setting for the newcomer, who should, if possible, arrive in it as the then youngest member. In instances in which there is more than one child in a family available for adoption, every effort should be made not to separate them; the adoption of brothers and sisters should, if possible, be arranged in such a way that their emotional ties will not be severed.

From the viewpoint of the adopting parents, there are also certain considerations. They may wish some assessment of the child's mental capacity and information concerning his heredity. The difficulties in appraising intellectual potentialities of a child, particularly at an early age, are pointed out in the report. It is suggested that persons who want to adopt infants should be told : " This child may turn out to be of average ability, below average, or superior. So might one of your own ! If emotionally you in honesty cannot incorporate a child into your life whether he be slow or accelerated, perhaps you should not take the risk nor allow him to take the risk that every parent and child has when, for better or worse, by delivery or by adoption, their lives become enmeshed."

The report deals at some length with the particular problem of the natural mother, whether or not she should keep her baby and the timing of her separation from him if she decides upon relinquishment. In the latter case, it is considered best to place a child in an adopting home as soon as possible to avoid a change which may be disturbing for him. Although direct placement is, in general, regarded by adoption agencies as unfortunate, the delay often involved in making inquiries for safeguarding the baby and the adopting parents may produce impatience in the adopting parents and possibly damaging circumstances for the child.

It is emphasized that the adopted child needs special protection. Of particular importance at every stage is the quality of motherly care which he receives. This is of primary significance if intermediate placement in a foster home or nursery is necessary. To make the transition from one environment to another easier, he should be given a chance to become familiar with the people to whom he is going. No change should be sudden, and in each change the child should retain some object from the old environment to which he has been attached, so that some continuity of experience may be preserved. The adopted child should be aware, from an early age, of the fact that he is adopted; but he must have assurance as to the validity of his relationship with his new parents and protection against intrusion upon this relationship by his natural parent(s) or by legal complications.

Throughout the report, stress is laid on the necessity of having skilled and understanding personnel to carry out the " very complicated processes " of adoption—personnel with an awareness of what these processes may mean to the people involved, particularly to the adopted child.

LEPROSY

The first report of the Expert Committee on Leprosy [1] emphasizes the fact that " leprosy is not a disease apart ", that it is rather " a general public-health problem in the countries where it is endemic ". It is maintained that any measures for raising public-health standards are likely to help in the control of leprosy, whether they be directed against specific infections or infestations or be concerned with the improvement of nutrition, sanitation, or housing. It is further stated that " public health and not public fears and prejudices should determine the policy in respect to leprosy control ".

Considering methods of leprosy control, the committee endorses the statement made at the Fourth International Congress for Leprosy (Cairo, 1938) to the effect that leprosy " is an infectious disease spread principally by direct contact, and possibly by indirect contact . . . As with other infectious diseases, the aim is to discover cases as soon as possible in order to control the spread of infection to the community, and in order to give the patient the benefit of treatment ". Modern treatment is, in fact, regarded as " the most potent, generally applicable weapon now available in the control of the disease ". The report describes a dispensary system, aiming at the early detection and treatment of cases, which is felt to be essential in the organization of leprosy control.

In respect to isolation, and from an administrative point of view, leprosy cases should be classified as infectious (" open ") or non-infectious (" closed "), even though it is recognized that there are degrees of infectiousness. Only cases considered infectious need to be subjected to some form of isolation, but all cases require treatment. It is pointed out that there are variations according to country and area with regard to the degree of isolation of infectious cases necessary, the methods of securing it, and the amount of compulsion required. Attention is drawn to the disadvantages of compulsory isolation. Because patients fear to break up their families and to leave their dependants unprovided for, and, still more, because they fear an indefinite stay in the leprosarium, they tend to conceal their disease at a time when treatment would be most effective and when they are a danger to their contacts. The need for education of the public concerning the nature of leprosy is stressed, since " public opinion ranges from callous indifference to panic, and the patient and his relatives are often subjected to barbaric cruelty ".

Sulfone treatment is stated to be " greatly superior to previous forms of treatment ". It was long believed that DDS (d-aminodiphenyl sulfone) was too toxic for use in human beings, but " experience in thousands of cases of leprosy in several countries for a period of over four years has shown this

[1] *Wld Hlth Org. techn. Rep. Ser.* 1953, 71. 28 pages. Price : 1/6, $0.20, or Sw. fr. 0.80. Published in English and in French.

belief to be erroneous, provided the dose is suitably regulated ". Treatment with thiosemicarbazones and other therapeutic agents, supplementary therapy, physiotherapy, surgery, and orthopaedics are also discussed in the report.

Possible prophylaxis by means of BCG has been studied in some countries, particularly Brazil; further investigations, it is felt, are needed to confirm the preventive value of this vaccine in leprosy and are accordingly recommended.

Other subjects dealt with are the epidemiology of leprosy, classification of cases, immunology (in which details concerning the lepromin test are given), and the significance of histopathological examinations.

Review of WHO Publications

COMPARATIVE STUDY OF HEALTH LEGISLATION : NURSING

The WHO Expert Committee on Nursing at its second session recommended that the Organization study " different methods used in legislating for nursing ".[1] Accordingly, a survey of nursing legislation in about twenty countries and State subdivisions has been made and has recently been published in the *International Digest of Health Legislation*.[2] This study deals, in particular, with provisions relative to conditions of training, approval of nursing schools, organization and powers of nursing councils, the practice of the profession of nursing, and recognition of foreign diplomas and of qualifications obtained before promulgation of new laws. Most of the legislative texts to which this study refers have appeared either in the section " Lois et réglementations sanitaires " of the *Bulletin mensuel de l'Office international d'Hygiène publique* or in the *International Digest of Health Legislation*.

One of the most important sections of the study is that on " Nursing practice "—that is, the legislation regarding the registration of nurses, their removal from the register, and their authorization to practise. In most of the countries studied, the law simply prohibits unqualified personnel from using the title " nurse " and from wearing the registered nurse's uniform and, in some cases, certain badges ; it does not prohibit the practice of nursing by unqualified persons, but merely reserves to registered nurses the right to use the title.

---

[1] *Wld Hlth Org. techn. Rep. Ser.* 1952, 49, 19

[2] *Int. Dig. Hlth Legis.* 1953, 4, 463. This study is also available, in English and in French, in the form of a reprint. Price : 2/-, $0.25, or Sw. fr. 1.—

Laws which limit the practice of nursing to qualified nurses are much less common. This is probably due to lack of personnel. Among the laws which prohibit the practice of nursing by any but qualified nurses may be mentioned those in force in Austria, Canada (Prince Edward Island and Quebec), France, Japan, Switzerland (Cantons of Aargau, Neuchâtel, and St. Gallen), and the USA (States of Connecticut, Florida, New York, Pennsylvania, and Tennessee). When legislation restricts the practice of nursing, it must define nursing, so that persons who, under special circumstances, are providing care which would otherwise be considered nursing are exempted (e.g., family care or care by domestics, first aid, care given by assistant nurses, etc.).

The lack of precision in the definition of the nursing function is striking. This vagueness is, however, directly related to the " de facto " situation. The nursing function includes not only a varied and varying range of technical skills, but also many tasks which can be performed by any unqualified person. On the other hand, the nurse is, in the exercise of her profession, becoming more and more exposed to the risk of violating the laws with regard to the practice of medicine, since increasing demands are made upon her to carry out professional acts which demand wide technical knowledge. For these reasons it is not possible to lay down absolutely precise legal definitions of the nurse's functions and thus to protect her effectively. In spite of these difficulties, some countries have defined nursing and have indicated the limits of the nurse's professional activities (e.g., Japan, Union of South Africa). Certain countries have also defined the care which may be given by auxiliary nurses.

Examination of the most recent legislative texts shows that a number of governments are giving attention to the question of recognition of foreign qualifications. This problem is, in fact, becoming increasingly important in view of the rapidity of population movements. Some countries recognize diplomas acquired abroad by their own nationals; in other countries, the legislation covers both nationals and foreigners. There are also reciprocity agreements between different countries with regard to recognition of qualifications. Reciprocal recognition of qualifications is made difficult, however, by the multiplicity of professional titles in use and by the differences in the nature and duration of training required to obtain such titles. Since this multiplicity is due to the development of nursing which is characterized at the present stage by specialization, this difficulty will undoubtedly increase as time goes on.

In an appendix to the study, the various categories of nurses and their professional titles are shown in a table, by country, under five headings : nurses, specialized nurses, public-health nurses, assistant nurses, and a fifth heading under which are given the titles used in registration or licensure. Two observations are necessary : (1) in practice, many professional titles are used which do not yet have official recognition, and only titles sanc-

tioned by legislation are listed in this table; (2) it should be noted that the similarity of the terms in use is often purely formal since the nature and duration of the training vary from country to country. The table will nevertheless be of interest to those who wish to obtain some idea of specialization in nursing in different countries.

WORLD DIRECTORY OF MEDICAL SCHOOLS

WHO has, from its beginning, been interested in medical educational institutions as the source of trained health personnel. A recent manifestation of this interest is the publication of the *World directory of medical schools*,[1] which aims to make readily available information on medical teaching institutions throughout the world.

More than 500 institutions are listed in the Directory. In addition to the name and place of each, the following information is given, wherever possible : the year in which the school was founded; details concerning its administration; the length of the academic year; conditions for admission; numbers of full-time and part-time teachers; total enrolment, by sex; number of new students admitted annually; language in which instruction is given; total number of years of study required to obtain a degree; the degrees obtainable; annual number of graduates; and annual tuition fees.

The collection of the data for the Directory was made through questionnaires addressed to the institutions themselves; in instances in which replies were not forthcoming, information was obtained through other sources, such as lists and directories. The accuracy of the latter could not be verified; also, some of the information given in such lists or directories, though at one time correct, may now be obsolete. The Organization hopes that, with the co-operation of all concerned, future editions of the Directory will be more exact and complete. The present Directory, however, meets a long-felt need and lays the foundation for improved subsequent editions.

[1] World Health Organization (1953) *World directory of medical schools*, Geneva. 220 pages, clothbound. Price : 25/-, $4.00, Fr. fr. 1,200.—, Sw. fr. 15.—. Bilingual edition, English and French.

Design and Operation of Septic Tanks

A monograph on the design and operation of sewage treatment and disposal installations for small groups of houses or for isolated dwellings will soon be published by WHO. This monograph contains some of the papers which were presented at the Third European Seminar for Sanitary Engineers, together with a summary of the discussions at the Seminar. It is a publication which will be of particular interest to sanitary engineers and public-health authorities. A review of this monograph will be published in the November *Chronicle*.

Views on WHO

A Tribute to Dr. Chisholm

In a recent editorial (1953, **1**, 1324), the *British Medical Journal* makes the following comment on the occasion of the retirement of the Director-General of WHO :

" Exceptional qualities are called for in the chief administrative officer of an international organization. He must be not only its servant but in a sense its master, not only carry out its decisions but to some extent initiate and ensure them; he must be not only a Civil Servant but a principal in world affairs. The United Nations has been fortunate in the men who have occupied the principal posts in its specialized agencies, conspicuously so in the World Health Organization, which from its start in 1946 has had Dr. Brock Chisholm as its Director-General. Dr. Chisholm, who is still the right side of 60, is retiring from the post, and no doubt has further achievement in other important spheres in front of him. He was well chosen, for he had been Director-General of Medical Services in the Canadian Army and Deputy Minister of National Health and Welfare, in the Federal Cabinet, and before he held those posts he had been for seven years in general medical practice in Toronto, a period which was both preceded and followed by a year or two of postgraduate work in London.

" In his farewell address delivered to the recent sixth World Health Assembly Dr. Chisholm spoke of the conditions essential to the success of the Organization, insisting that the first of them was the participation of all nations in the work of WHO...

" There has been some girding at the cost of what are sometimes called United Nations ' frills '. Even in the old days of the League, whose building at Geneva WHO inhabits, the health budget was a favourite target for criticism, not least among the delegates themselves who spent many a midnight devising cheeseparing economies. Yet, as Dr. Chisholm pointed out, the expenditure through WHO is no more than the amount which many a large city spends on its municipal sanitary arrangements. Seen against the background of need in a world where most people are still without the benefits of modern medical knowledge, the WHO budget is ridiculously small. The contribution of the United Kingdom, so far as we can make it out, is about one penny a year for each citizen. The world has been slow in realizing that health—and not on humanitarian grounds alone—is an international concern. It is true that there have been recent upsurges, such as Point IV and the Colombo Plan, but, while it has been proclaimed that nations must be prepared to invest an important part of their resources in banishing economic and social insecurity which give rise to the fear of war, the impulse has been bedevilled because this very fear of war gives an overriding priority to rearmament and prevents governments from embarking upon the rehabilitation of the under-developed areas. Nevertheless, WHO has achieved much in seven years in the control of communicable diseases and in the encouragement of national health projects. But most of all, as Dr. Chisholm said, it has afforded evidence, along with other agencies of the United Nations, that men belonging to widely different political, social, and religious systems can co-operate in fraternal association."

National Citizens Committee for WHO

In an article entitled " WHO and you " the *American Journal of Public Health* (1953, 43, 339) describes some of the ways in which WHO and its activities are being brought to the attention of the general public :

" Association members will undoubtedly recall the excellent symposium on International Health held at the San Francisco meeting in 1951. Dr. Brock Chisholm and two of WHO's regional directors, Dr. Chandra Mani and Dr. Fred L. Soper, described the obstacles to progress in world health and what WHO is doing in its program to meet them. The National Citizens Committee for the World Health Organization co-sponsored this session, and Dr. Frank G. Boudreau, representing that committee, concluded the symposium with a stirring paper on Our Stake in World Health in which he pointed out the obstacles here at home in the United States which stand in the way of adequate support of the work of WHO. First among these obstacles is ignorance and the public apathy which goes with it.

" Take the situation as it now stands. If you stepped out on the sidewalk today, stopped a man, and asked him what the phrase ' world health ' means to him, he would be nonplussed. If you asked him what the letters WHO meant to him, you would probably be answered by a blank stare. UN would produce a response, possibly UNESCO, but the work of those Specialized Agencies affiliated with the UN is probably better recognized outside our country than here.

" The purpose of the National Citizens Committee for WHO is to eliminate this form of illiteracy, through education to get Americans interested in helping to improve the health of people in all parts of the world and to recognize what the World Health Organization is and should be doing in this field. As the next step in its program, the committee is organizing a National Conference on World Health open to all individuals and organizations who are interested in helping to create better health conditions for the world's population...

" All of us have a duty to be well informed about WHO and its work. Our readers may be interested to know that anyone can receive the WHO Newsletter free of charge... More technical documents, such as the *Bulletin* of the WHO, the *Chronicle*, and special reports, and monographs, may be ordered from [WHO sales agents, either directly or through any bookseller]."

Publication devoted to WHO

Following a precedent established five years ago, the *Journal of the American Medical Women's Association* has published an annual number devoted to the activities of WHO.[1] In addition to an editorial on the National Citizens Committee for the World Health Organization and a summary of the Annual Report of the Director-General for 1952, the *Journal* contains a number of special contributions by WHO staff members : " WHO and Afghanistan ", by R. L. Tuli; " The work of WHO on virus and rickettsial diseases ", by A. M. Payne; and " Environment and health ", by R. N. Clark.

[1] *J. Amer. med. Wom. Ass.* 1953, 8, 217-245

International Non-Proprietary Names

It has long been realized that there is a need to avoid the confusion which exists when different non-proprietary names come into use for the same medicinal substance. This multiplicity of names can be the source of difficulties in the daily work of the physician and of the pharmacist, as well as in therapeutic research throughout the world.

In many countries attempts have been made and progress achieved in obtaining the desired uniformity on a national level (examples : " Generic Names " of the Council on Pharmacy and Chemistry of the American Medical Association, " Approved Names " of the General Medical Council in the United Kingdom, " Nordiske Farmakopenaevn " of the Scandinavian Pharmacopoeia Council, " Dénominations communes " in France, etc.). The World Health Organization was asked to co-ordinate these efforts at an international level, and special requests were made to select international non-proprietary names for drugs liable to produce addiction, in order to facilitate their international control.

According to the following " Procedure for the selection of recommended international non-proprietary names for drugs moving in international commerce ", annexed to Resolution EB12.R24, adopted by the Executive Board at its twelfth session,[1] WHO receives requests for the establishment of international non-proprietary names for new drugs which can be used freely in all countries, and publishes lists of proposed international non-proprietary names.

Procedure for the Selection of Recommended International Non-Proprietary Names for Drugs Moving in International Commerce

The following procedure shall be followed by the World Health Organization in the selection of recommended international non-proprietary names for drugs moving in international commerce, in accordance with the World Health Assembly resolution WHA3.11 :[2]

1. Proposals for recommended international non-proprietary names shall be submitted to the World Health Organization on the form provided therefor.

2. Such proposals shall be submitted by the Director-General of the World Health Organization to the members of the Expert Advisory Panel on the International Pharmacopoeia and Pharmaceutical Preparations designated for this purpose, for consideration in accordance with the " General principles for guidance in devising international non-proprietary names ".[3] The name used by the person discovering or first developing

[1] *Off. Rec. Wld Hlth Org.* 49, 29 (Resolution EB12.R24)

[2] *Off. Rec. Wld Hlth Org.* 28, 19

[3] See *Wld Hlth Org. techn. Rep. Ser.* 43, 29 or *Chron. Wld Hlth Org.* 1952, 6, 324.

and marketing a drug shall be accepted, unless there are compelling reasons to the contrary.

3. Subsequent to the examination provided for in Rule 2, the Director-General of the World Health Organization shall give notice that a proposed international non-proprietary name is being considered.

A. Such notice shall be given by publication in the *Chronicle of the World Health Organization* and by letter to Member States and to national pharmacopoeia commissions or other bodies designated by Member States.

(i) Notice may also be sent to specific persons known to be concerned with a name under consideration.

B. Such notice shall :

(i) set forth the name under consideration;
(ii) identify the person who submitted a proposal for naming the substance, if so requested by such person;
(iii) identify the substance for which a name is being considered;
(iv) set forth the time within which comments and objections will be received and the person and place to whom they should be directed;
(v) state the authority under which the World Health Organization is acting and refer to these rules of procedure.

C. In forwarding the notice, the Director-General of the World Health Organization shall request that Member States take such steps as are necessary to prevent the acquisition of proprietary rights in the proposed name during the period it is under consideration by the World Health Organization.

4. Comments on the proposed name may be forwarded by any person to the World Health Organization within six months of the date of publication, under Rule 3, of the name in the *Chronicle of the World Health Organization.*

5. A formal objection to a proposed name may be filed by any interested person within six months of the date of publication, under Rule 3, of the name in the *Chronicle of the World Health Organization.*

A. Such objection shall :

(i) identify the person objecting;
(ii) state his interest in the name;
(iii) set forth the reasons for his objection to the name proposed.

6. Where there is a formal objection under Rule 5, the World Health Organization may either reconsider the proposed name or use its good offices to attempt to obtain withdrawal of the objection. No name shall be selected by the World Health Organization as a recommended international non-proprietary name while there exists a formal objection filed under Rule 5 which has not been withdrawn.

7. Where no objection has been filed under Rule 5, or all objections previously filed have been withdrawn, the Director-General of the World Health Organization shall give notice in accordance with subsection A of Rule 3 that the name has been selected by the World Health Orgnization as a recommended international non-proprietary name.

8. In forwarding a recommended international non-proprietary name to Member States under Rule 7, the Director-General of the World Health Organization shall :

A. request that it be recognized as the non-proprietary name for the substance; and

B. request that Member States take such steps as are necessary to prevent the acquisition of proprietary rights in the name, including prohibiting registration of the name as a trade-mark or trade-name.

In accordance with paragraph 3 of the above Procedure, notice is hereby given that the following names are under consideration by the World Health Organization as proposed international non-proprietary names.

Proposed International Non-Proprietary Names

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
acebrocholum acebrochol acébrochol	acetodibromodihydrocholesterol acéto dibromo dihydro cholestérol
acediasulfonum natricum acediasulfone sodium acédiasulfone sodique	4-carboxymethylamino-4′-amino-diphenylsulfone carboxymethylamino-4 amino-4′ diphénylsulfone
acetaminosalolum acetaminosalol acétaminosalol	acetyl-4-aminophenyl salicylate salicylate d'acétyl amino-4 phényle
acidum aminoaceticum amino-acetic acid acide amino-acétique	amino-acetic acid, glycocoll acide amino-acétique, glycocolle
acidum dehydrocholicum dehydrocholic acid acide déhydrocholique	
acidum gentisicum gentisic acid acide gentisique	5-hydroxysalicylic acid acide hydroxy-5 salicylique
acidum glutamicum glutamic acid acide glutamique	glutamic acid acide glutamique
acidum iopanoicum iopanoic acid acide iopanoïque	3-(3-amino-2,4,6-triiodophenyl)-2-ethylpropanoic acid acide (amino-3 triiodo-2,4,6 phényl) éthyl-2 propanoïque
acriflavinii chloridum acriflavinium chloride chlorure d'acriflavinium	mixture of the hydrochlorides of 3,6-diamino-10-methylacridinium chloride and 3,6-diaminoacridine mélange des chlorhydrates de chlorure de diamino-3,6 méthyl-10 acridinium et de diamino-3,6 acridine
adipheninum adiphenine adiphénine	diethylaminoethyl ester of diphenylacetic acid ester diéthylaminoéthylique de l'acide diphénylacétique

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
adrenalonum adrenalone adrélanone	α-3,4-dihydroxyphenylβ-methylaminoethanone α-(dihydroxy-3,4 phényl)β-méthylamino-éthanone
aethacridinum ethacridine ethacridine	2-ethoxy-6,9-diaminoacridine éthoxy-2 diamino-6,9 acridine
aethoxazorutosidum ethoxazorutoside ethoxazorutoside	monomorpholylethylrutoside monomorpholyl éthyl rutoside
alcoholum benzylicum benzyl alcohol alcool benzylique	phenylcarbinol phényl carbinol
aldesulfonum natricum aldesulfone sodium aldésulfone sodique	disodium salt of 4,4′-diaminodiphenylsulfone formaldehydesulfoxylic acid sel disodique de l'acide diamino-4,4′ diphényl sulfone formaldéhyde sulfoxylique
allobarbitalum allobarbital allobarbital	5,5-diallylbarbituric acid acide diallyl-5,5 barbiturique
allocupreidum natricum allocupreide sodium allocupréide sodique	sodium cuproallylthioureidobenzoate cupro allyl thiouréido benzoate de sodium
allomethadionum allomethadione allométhadione	3-allyl-5-methyloxazolidine-2,4-dione allyl-3 méthyl-5 oxazolidine dione-2,4
alphameprodinum alphameprodine alphaméprodine	α-propionoxy-4-phenyl-1-methyl-3-ethyl-piperidine α-propionoxy phényl-4 méthyl-1 éthyl-3 pipéridine
alphaprodinum alphaprodine alphaprodine	1,3-dimethyl-4-phenyl-4-propionoxypiperidine diméthyl-1,3 phényl-4 propionoxy-4 pipéridine
aminoacridinum aminoacridine aminoacridine	9-aminoacridine amino-9 acridine
aminoaethylis nitras aminoethyl nitrate nitrate d'aminoéthyle	nitrate ester of aminoethanol ester nitrique d'amino éthanol

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
aminothiazolum aminothiazole aminothiazol	
amobarbitalum amobarbital amobarbital	5-ethyl-5-(3′-methylbutyl) barbituric acid acide éthyl-5 (méthyl-3′ butyl)-5 barbiturique
amodiaquini hydrochloridum amodiaquine hydrochloride chlorhydrate d'amodiaquine	7-chloro-4-(3′-diethylaminomethyl-4′-hydroxyanilino) quinoline dihydrochloride dihydrate bichlorhydrate bihydraté de (diéthylaminométhyl-3′ hydroxy-4′ anilino)-4 chloro-7 quinoléine
amoxecainum amoxecaine amoxecaïne	*N,N′*-triethylethylenediamine-*N*-β-ethyl *p*-aminobenzoate *p*-aminobenzoate de *N,N′*-triéthyléthylènediamine *N*-β-éthyle
antazolini hydrochloridum antazoline hydrochloride chlorhydrate d'antazoline	2-N-benzylanilinomethylimidazoline hydrochloride chlorhydrate de 2-phénylbenzyl-amino méthyl-imidazoline
aprobarbitalum aprobarbital aprobarbital	allyl*iso*propylbarbituric acid acide allyl *iso*propyl barbiturique
aurothioglycanidum aurothioglycanide aurothioglycanide	auromercaptoacetanilide auromercaptoacétanilide
azamethonii bromidum azamethonium bromide bromure d'azaméthonium	3-methyl-3-azapentane-1,5-bis (ethyl-dimethyl-ammonium) bromide bromure de méthyl-3 aza-3 pentane bis (éthyl diméthyl ammonium) -1,5
bacitracinum bacitracin bacitracine	
benethamini penicillinum benethamine penicillin pénicilline-bénéthamine	benzylpenicillin salt of *N*-benzyl-β-phenylethylamine sel de *N*-benzyl-β-phényléthylamine de la benzyl-pénicilline
benzalkonii chloridum benzalkonium chloride chlorure de benzalkonium	mixture of alkylbenzyldimethylammonium chlorides mélange de chlorures d'alkylbenzyl diméthylammonium
benzethonii chloridum benzethonium chloride chlorure de benzéthonium	benzyldimethyl-*p*-(1,1,3,3-tetramethylbutyl) phenoxyethoxyethylammonium chloride chlorure de benzyldiméthyl *p*-(tétraméthyl-1,1,3,3 butyl) phénoxy éthoxy éthylammonium

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
benzododecinium benzododecinium benzododécinium	dimethylbenzyldodecylammonium diméthyl benzyl dodécyl ammonium
benzoestrolum benzoestrol benzoestrol	3-ethyl-2,4-bis (*p*-hydroxyphenyl) hexane éthyl-3 bis (*p*-hydroxyphényl)-2,4 hexane
benzpyrinii bromidum benzpyrinium bromide bromure de benzpyrinium	1-benzyl-3-(dimethylcarbamyloxy)pyridinium bromide bromure de benzyl-1 (diméthyl carbamyl oxy)-3 pyridinium
benzylsulfamidum benzylsulfamide benzylsulfamide	4-benzylaminophenylsulfonamide benzylamino-4 phénylsulfonamide
betameprodinum betameprodine bétaméprodine	β-propionoxy-4-phenyl-1-methyl-3-ethylpiperidine β-propionoxy phényl-4 méthyl-1 éthyl-3 pipéridine
bibrocatholum bibrocathol bibrocathol	bismuth derivative of tetrabromopyrocatechol dérivé bismuthique de tétrabromo pyrocatéchol
biotinum biotin biotine	
bithionolum bithionol bithionol	2,2′-thiobis (4,6-dichlorophenol) thio-2,2′bis (dichloro-4,6 phénol)
bromisovalum bromisoval bromisoval	α-bromo*iso*valerylcarbamide α-bromo *iso*valéryl carbamide
calcii pantothenas calcium pantothenate pantothénate de calcium	calcium salt of *N*-[1,3-dihydroxy-2-dimethylbutyryl] β-alanine sel calcique de *N*-[dihydroxy-1,3 diméthyl-2-butyryl] β-alanine
camphotamidum camphotamide camphotamide	camphosulfonyl-*N*-methylpyridine-β-diethyl-carbonamide β-diéthyl carbonamide de la campho sulfonyl-*N*-méthyl pyridine
caramiphenii chloridum caramiphenium chloride chlorure de caramiphénium	diethylaminoethyl-1-phenylcyclopentane-1-carb oxylate hydrochloride chlorhydrate de diéthylaminoéthyl phényl-1 cyclo-pentane carboxylate-1

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
carbomycinum carbomycin carbomycine	an antibiotic substance produced by a strain of *Streptomyces halstedii* une substance antibiotique produite par une souche de *Streptomyces halstedii*
carbromalum carbromal carbromal	α-bromo-α-ethylbutyrylurea α-bromo-α-éthyl butyryl urée
cetobemidonum ketobemidone cétobémidone	4-*m*-hydroxyphenyl-1-methyl-4-propionoyl-piperidine méthyl-1 *m*-hydroxyphényl-4 propionoyl-4 pipéridine
cetrimonium cetrimonium cétrimonium	cetyltrimethylammonium cétyl triméthyl ammonium
cetylpyridinii chloridum cetylpyridinium chloride chlorure de cétylpyridinium	
chloramphenicolum chloramphenicol chloramphénicol	D(-)-threo-1-*p*-nitrophenyl-2-dichloroacetamido-1,3-propanediol D(-)-thréo *p*-nitrophényl-1 dichloracétamido-2 propanediol-1-3
chlorazodinum chlorazodin chlorazodine	α,α′-azo-bis(chloroformamidine) α,α′-azo bis(chloroformamidine)
chlorcyclizinii chloridum chlorcyclizinium chloride chlorure de chlorcyclizinium	(±) 1-(*p*-chlorobenzhydryl)4-methylpiperazinium chloride chlorure de (±) méthyl-4 (*p*-chlorobenzhydryl)-1 pipérazinium
chlormethinum chlormethine chlorméthine	di-(chloroethyl)methylamine di-(chloroéthyl)méthylamine
chlornaphazinum chlornaphazine chlornaphazine	2,2′-dichlorodiethyl-β-naphthylamine dichloro-2,2′ diéthyl β-naphtylamine
chlorophenothanum technicum technical chlorophenothane chlorophénothane technique	contains *p,p′*-dichlorodiphenyltrichloro-ethane and *o,p′*-dichlorodiphenyltrichloro-ethane contient du *p-p′*-dichlorodiphényltrichlor-éthane et du *o-p′*-dichlorodiphényltrichlor-éthane
chloropyraminum chloropyramine chloropyramine	*N*-β-dimethylaminoethyl-*N*-*p*-chlorobenzyl-2-aminopyridine *N*-β-diméthylamino éthyl-*N*-*p*-chlorobenzyl amino-2 pyridine

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
chloropyrilenii citras chloropyrilenium citrate citrate de chloropyrilénium	*N,N*-dimethyl-*N'*-(2-pyridyl)-*N'*-(5-chloro-2-thenyl) ethylenediamine citrate citrate de *N,N*-diméthyl *N'*-(pyridyl-2) *N'*-(chloro-5 thényl-2) éthylènediamine
chlorpromazinii chloridum chlorpromazinium chloride chlorure de chlorpromazinium	2-chloro-10-(3'-dimethylaminopropyl) phenothiazinium chloride chlorure de chloro-2 (diméthylamino-3' propyl)-10 phénothiazinium
chlorquinaldolum chlorquinaldol chlorquinaldol	5,7-dichloro-8-hydroxy-2-methylquinoline dichloro-5,7 hydroxy-8 méthyl-2 quinoléine
cholinii gluconas cholinium gluconate gluconate de cholinium	2-(hydroxyethyl) trimethylammonium D-gluconate D-gluconate de (hydroxyéthyl)-2 triméthylammonium
cinchocainii chloridum cinchocainium chloride chlorure de cinchocaïnium	hydrochloride of the β-diethylaminoethylamide of 2-butyloxycinchoninic acid chlorhydrate du β-diéthylaminoéthylamide de l'acide butyloxy-2 cinchoninique
cinchophenum cinchophen cinchophène	2-phenylquinoline-4-carboxylic acid acide phényl-2 quinoléine carboxylique-4
cocarboxylasum cocarboxylase cocarboxylase	pyrophosphoric ester of thiamine ester pyrophosphorique de thiamine
corbadrinum corbadrine corbadrine	1-(3,4-dihydroxyphenyl)2-aminopropanol hydrochloride chlorhydrate de (dihydroxy-3,4 phényl)-1 amino-2 propanol
corticotrophinum corticotrophin corticotrophine	adrenocorticotrophic hormone hormone adrénocorticotrope
cortisonum cortisone cortisone	11-dehydro-17-hydroxycorticosterone déhydro-11 hydroxy-17 corticostérone
cyanocobalaminum cyanocobalamin cyanocobalamine	vitamin B_{12} vitamine B_{12}
cyclizinii chloridum cyclizinium chloride chlorure de cyclizinium	*N*-diphenylmethyl-*N'*-methylpiperazinium dichloride dichlorure de *N*-diphénylméthyl-*N'*-méthylpipérazinium

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
cyclobarbitalum cyclobarbital cyclobarbital	5-(1-cyclohexenyl)5-ethylbarbituric acid acide éthyl-5 (cyclohexényl-1)-5 barbiturique
cyclopentaminum cyclopentamine cyclopentamine	*N*,-α-dimethylcyclopentylethylamine *N*,-α-diméthylcyclopentyl éthylamine
cyclopropanum cyclopropane cyclopropane	
decamethonium decamethonium décaméthonium	decamethylene-1,10-bistrimethylammonium décaméthylène bis-triméthylammonium-1,10
dexamphetaminum dexamphetamine dexamphétamine	(+) amphetamine (+) amphétamine
dextranum dextran dextran	
dextromethorphanum dextromethorphan dextrométhorphane	(+) 3-methoxy-*N*-methylmorphinan (+) méthoxy-3 *N*-méthylmorphinane
dextrorphanum dextrorphan dextrorphane	(+) 3-hydroxy-*N*-methylmorphinan (+) hydroxy-3 *N*-méthylmorphinane
diaphenylsulfonum diaphenylsulfone diaphénylsulfone	4,4′-diaminodiphenylsulfone diamino-4,4′ diphényl sulfone
dibemethinum dibemethine dibéméthine	dibenzylmethylamine dibenzyl méthylamine
dichlorophenarsini hydrochloridum dichlorophenarsine hydrochloride chlorhydrate de dichlorophénarsine	3-amino-4-hydroxyphenyl dichlorarsine hydrochloride chlorhydrate d'amino-3 hydroxy-4 phényl dichloroarsine-1
dienoestrolum dienoestrol dienoestrol	*p,p′*-dihydroxy-3,4-diphenylhexadiene-2,4 *p,p′*-dihydroxy diphényl-3,4 hexadiène-2,4

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
diethazinum diethazine diéthazine	*N*-diethylaminoethylphenothiazine *N*-diéthylaminoéthyl phénothiazine
diethylcarbamazinum diethylcarbamazine diéthylcarbamazine	1-diethylcarbamoyl-4-methylpiperazine diéthylcarbamoyl-1 méthyl-4 pipérazine
digitoxosidum digitoxoside digitoxoside	consists of digitoxoside proper plus a small amount of related heterosides composé de digitoxoside proprement dit, plus une petite quantité d'hétérosides apparentés
dihydrostreptomycinum dihydrostreptomycin dihydrostreptomycine	
dihydrotachysterolum dihydrotachysterol dihydrotachystérol	
diiodohydroxyquinolinum diiodohydroxyquinoline diiodohydroxyquinoléine	8-hydroxy-5,7-diiodoquinoline hydroxy-8 diiodo-5,7 quinoléine
dimenhydrinatum dimenhydrinate dimenhydrinate	2-(diphenylmethoxy)-*N*,*N*-dimethylethylammonium 8-chlorotheophyllinate choro-8 théophyllinate de (diphénylméthoxy)-2 *N*,*N*-diméthyl éthylammonium
dimercaprolum dimercaprol dimercaprol	2,3-dimercaptopropanol dimercapto-2,3 propanol
dimethiodalum natricum dimethiodal sodium diméthiodal sodique	sodium diiodomethanesulfonate diiodo méthane sulfonate de sodium
dimethyltubocurarinii chloridum dimethyltubocurarinium chloride chlorure de diméthyltubocurarinium	
dimoxylinii phosphas dimoxylinium phosphate phosphate de dimoxylinium	6,7-dimethoxy-1-(4′ethoxy-3′-methoxybenzyl) 3-methyl*iso*quinolinium phosphate phosphate de diméthoxy-6,7 (éthoxy-4′ méthoxy-3′ benzyl)-1 méthyl-3 *iso*quinoléinium
diodonum diodone diodone	diethanolamine 3,5-diiodo-4-pyridone-*N*-acetate diiodo-3,5 pyridone-4 *N*-acétate de diéthanolamine

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
diperodoni hydrochloridum diperodon hydrochloride chlorhydrate de dipérodon	3-(1-piperidyl)1,2-propanediol dicarbanilate hydrochloride chlorhydrate du dicarbanilate de (pipéridyl-1)-3 propanediol-1,2
diphenanum diphenan diphénane	4-benzylphenyl carbamate carbamate de benzyl-4 phényle
diphenhydramini hydrochloridum diphenhydramine hydrochloride chlorhydrate de diphénhydramine	β-benzhydryl 2-dimethylaminoethyl ether hydrochloride chlorhydrate de l'éther-oxyde du benzhydrol et du diméthylamino éthanol
diprophyllinum diprophylline diprophylline	dihydroxypropyltheophylline dihydroxy propyl théophylline
disulfiramum disulfiram disulfirame	tetraethylthiuram disulfide disulfure de tétraéthyl thiurame
dixanthogenum dixanthogen dixanthogène	diethyldixanthogen diéthyldixanthogène
doxylaminii succinas doxylaminium succinate succinate de doxylaminium	2-[α-(2-dimethylaminoethoxy)-α-methylbenzyl] pyridine succinate succinate de [α-(diméthylamino-2 éthoxy) α-méthyl-benzyl]-2 pyridine
ethinyloestradiolum ethinyloestradiol éthinylœstradiol	17-ethinyl-3,17-dihydroxy-△-1,3,5-oestratriene éthinyl-17 dihydroxy-3-17 œstratriène-1-3-5
eucatropinum eucatropine eucatropine	4-hydroxy-1,2,2,6-tetramethylpiperidine phenyl-glycollate phénylglycollate de tétraméthyl-1,2,2,6 hydroxy-4 pipéridine
fenethazinum fenethazine fénéthazine	*N*-(2-dimethylamino-1-ethyl) phenothiazine *N*-(diméthylamino-2 éthyl-1) phénothiazine
fumagillinum fumagillin fumagilline	an antibiotic substance produced by certain strains of *Aspergillus fumigatus* une substance antibiotique produite par certaines souches d'*Aspergillus fumigatus*
furostilboestrolum furostilboestrol furostilboestrol	diethylstilboestrol furoate furoate de diéthylstilboestrol

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
furtrethonii iodidum furtrethonium iodide iodure de furtréthonium	furfuryltrimethylammonium iodide iodure de furfuryltriméthylammonium
gallaminum gallamine gallamine	1,2,3-tri(2′-diethylaminoethoxy) benzene tri-(β-diéthylamino éthoxy)-1-2-3 benzène
glucosulfamidum glucosulfamide glucosulfamide	glucose sodium bisulfite compound of sulfanilamidomethanol dérivé glucosé bisulfité sodique de sulfanilamido méthanol
glucosulfonum glucosulfone glucosulfone	*p,p′*-diaminodiphenylsulfone-*N,N′*-di-(glucose sodium sulfonate) *p,p′*-diaminodiphénylsulfone *N,N′*-di-(glucose sulfonate de sodium)
glycobiarsolum glycobiarsol glycobiarsol	bismuthyl 4-*N*-glycoloylaminophenyl arsinate *N*-glycoloylamino-4 phényl arsinate de bismuthyle
gonadotrophinum chorionicum chorionic gonadotrophin gonadotrophine chorionique	contains the gonad-stimulating substance obtained from the urine of pregnant women hormone gonadotrope obtenue à partir de l'urine de femme enceinte
gonadotrophinum sericum serum gonadotrophin gonadotrophine sérique	contains the follicle-stimulating substance obtained from the serum of pregnant mares hormone gonadotrope obtenue à partir du sérum de jument gravide
gramicidinum gramicidin gramicidine	
heptaminolum heptaminol heptaminol	2-amino-6-methylheptan-6-ol amino-2 méthyl-6 heptanol-6
hexachlorophenum hexachlorophene hexachlorophène	di-(2-hydroxy-3,5,6-trichlorophenyl)methane di-(hydroxy-2 trichloro-3,5,6 phényl)méthane
hexamethonium hexamethonium hexaméthonium	hexamethylene-1,6-bistrimethylammonium hexaméthylène bis-triméthylammonium-1,6
hexobarbitalum hexobarbital hexobarbital	5-(1-cyclohexenyl)-1,5-dimethyl-barbituric acid acide (cyclohexényl-1)-5 diméthyl-1,5 barbiturique

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
hexoestrolum hexoestrol hexœstrol	3,4-di-(*p*-hydroxyphenyl)*n*-hexane di-(*p*-hydroxyphényl)-3,4 *n*-hexane
homatropini methylbromidum homatropine methylbromide méthylbromure d'homatropine	
hyaluronidasum hyaluronidase hyaluronidase	enzymes of various origins which depolymerize hyaluronic acid enzymes de diverses origines provoquant la dépolymérisation de l'acide hyaluronique
hydralazinum hydralazine hydralazine	1-hydrazinophthalazine hydrazino-1 phtalazine
hydrocodoni bitartras hydrocodone bitartrate bitartrate d'hydrocodone	dihydrocodeinone acid tartrate bitartrate de dihydrocodéinone
hydrocortisonum hydrocortisone hydrocortisone	17-hydroxycorticosterone hydroxy-17 corticostérone
hydromorphoni hydrochloridum hydromorphone hydrochloride chlorhydrate d'hydromorphone	dihydromorphinone hydrochloride chlorhydrate de dihydromorphinone
hydroxyamphetaminii bromidum hydroxyamphetaminium bromide bromure d'hydroxyamphétaminium	1-*p*-hydroxyphenyl-2-aminopropane hydrobromide bromhydrate de *p*-hydroxyphényl-1 amino-2 propane
hydroxyprocainum hydroxyprocaine hydroxyprocaïne	diethylaminoethanol 4-aminosalicylate amino-4 salicylate de diéthylamino éthanol
hydroxypyridini tartras hydroxypyridine tartrate tartrate d'hydroxypyridine	tartrate ester of 3-hydroxypyridine ester tartrique d'hydroxy-3 pyridine
hydroxytetracainum hydroxytetracaine hydroxytétracaïne	2-dimethylaminoethanol 4-*n*-butylamino-salicylate *n*-butylamino-4 salicylate de diméthylamino-2 éthanol
ibrotamidum ibrotamide ibrotamide	ethyl*iso*propyl-α-bromacetamide éthyl *iso*propyl α-bromacétamide

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
ichthammolum ichthammol ichthammol	ammonium ichthyosulfonate ichthyolsulfonate d'ammonium
intermedinum intermedine intermédine	active principle of the *pars intermedia* of the pituitary principe actif du lobe intermédiaire d'hypophyse
iodetrylum iodetryl iodétryl	ethyl diiodostearate diiodostéarate d'éthyle
iodophthaleinum natricum iodophthalein sodium iodophtaléine sodique	disodium salt of tetraiodophenolphthalein sel disodique de tétraiodophénolphtaléine
iodothiouracilum iodothiouracil iodothiouracil	4-hydroxy-5-iodo-2-mercaptopyrimidine hydroxy-4 iodo-5 mercapto-2 pyrimidine
iproniazidum iproniazid iproniazide	1-*iso*nicotinyl-2-*iso*propylhydrazide *iso*nicotinyl-1 *iso*propyl-2 hydrazide
isomethadonum isomethadone isométhadone	6-dimethylamino-4,4-diphenyl-3-hexanone 5-methyl diméthylamino-6 diphényl-4,4 méthyl-5 hexanone-3
isoniazidum isoniazid isoniazide	*iso*nicotinyl hydrazide hydrazide de l'acide *iso*nicotinique
isoprenalinum isoprenaline isoprénaline	1-(3′,4′-dihydroxyphenyl)2-*iso*propylamino-ethanol (dihydroxy-3′,4′ phényl)-1 *iso*propylamino-2 éthanol
khellinum khellin khelline	5,8-dimethoxy-3-methyl-6,7-furano-chromone, extracted from the fruits of *Ammi visnaga* (L.) Lam. diméthoxy-5,8 méthyl-3 furano-6,7 chromone, extrait des fruits d'*Ammi visnaga* (L.) Lam.
levarterenolum levarterenol lévartérénol	(-) α-3,4-dihydroxyphenyl-β-aminoethanol (-) α-dihydroxy-3,4 phényl β-amino éthanol
levomethorphanum levomethorphan lévométhorphane	(-) 3-methoxy-*N*-methylmorphinan (-) méthoxy-3 *N*-méthylmorphinane

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
levorphanum levorphan lévorphane	(-) 3-hydroxy-*N*-methylmorphinan (-) hydroxy-3 *N*-méthylmorphinane
lidocainum lidocaine lidocaïne	diethylamino-2,6-dimethylacetanilide diéthylamino diméthyl-2,6 acétanilide
mafenidum mafenide maféníde	4-aminomethylphenylsulfonamide aminométhyl-4 phénylsulfonamide
maleylsulfathiazolum maleylsulfathiazole maléylsulfathiazol	maleyl-*p*-aminophenylsulfonamidothiazole maléyl *p*-amino phényl sulfamidothiazol
mannitoli hexanitras mannitol hexanitrate hexanitrate de mannitol	
medrylaminum medrylamine médrylamine	β-dimethylaminoethyl-*p*-methoxybenzhydryl ether éther-oxyde du β-diméthylaminoéthanol et du *p*-méthoxybenzhydrol
menadioli natrii sulfas menadiol sodium sulfate sulfate sodique de ménadiol	2-methyl-1,4-naphthoquinol disodium sulfate sulfate disodique de méthyl-2 naphtoquinol-1,4
menadioni natrii bisulfis menadione sodium bisulfite bisulfite sodique de ménadione	2-methyl-1,4-naphthoquinone sodium bisulfite bisulfite sodique de méthyl-2 naphtoquinone-1,4
mephenesinum mephenesin méphénésime	1,2-dihydroxy-3-(2′-methylphenoxy)propane dihydroxy-1,2 (méthyl-2′ phénoxy)-3 propane
mephenytoinum mephenytoin méphénytoïne	3-methyl-5,5-phenylethylhydantoin méthyl-3 phényléthyl-5,5 hydantoïne
mepyraminum mepyramine mépyramine	*N*-*p*-methoxybenzyl-*N*′, *N*′-dimethyl-*N*-2-pyridylethylenediamine diméthylaminoéthyl-*N*-*p*-méthoxybenzyl *N*-α-aminopyridine
meralluridum meralluride méralluride	mixture of methoxyoxymercuripropylsuccinylurea and theophylline mélange de méthoxy oxymercuripropylsuccinylurée et de théophylline

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
merbrominum merbromin merbromine	disodium salt of 2,7-dibromo-4-hydroxymercuri-fluoresceine sel disodique de dibromo-2,7 hydroxymercuri-4 fluorescéine
mercaptaminum mercaptamine mercaptamine	β-mercaptoethylamine β-mercaptoéthylamine
mercaptomerinum mercaptomerin mercaptomérine	disodium salt of *N*-(3-carboxymethylmercapto-mercuri-2-methoxy) propylcamphoramic acid sel disodique de l'acide *N*-(carboxyméthyl mercapto-mercuri-3 méthoxy-2) propylcamphoramique
mercuderamidum mercuderamide mercudéramide	hydroxymercuripropanolamide of *o*-carboxyphen-oxyacetic acid hydroxymercuri propanolamide de l'acide *o*-carboxyphénoxyacétique
mercurobutolum mercurobutol mercurobutol	4-*tert*-butyl-2-chloromercuriphenol *tert*-butyl-4 chloromercuri-2 phénol
mercurophyllinum mercurophylline mercurophylline	mixture of the sodium salt of the β-methoxy-γ-hydroxymercuripropylamide of trimethylcyclo-pentanedicarboxylic acid and theophylline mélange de sel sodique du β-méthoxy γ-hydroxy mercuripropylamide de l'acide triméthylcyclo-pentane dicarboxylique et de théophylline
mesulfenum mesulfen mésulfène	2,6-dimethylthianthrene diméthyl-2,6 thianthrène
metaraminoli bitartras metaraminol bitartrate bitartrate de métaraminol	(−) 1-*m*-hydroxyphenyl-2-amino-1-propanol hydrogen (+) tartrate (+) tartrate monobasique de (−) *m*-hydroxyphényl-1 amino-2 propanol-1
methacholinii chloridum methacholinium chloride chlorure de méthacholinium	acetyl-β-methylcholinium chloride chlorure d'acétyl β-méthyl cholinium
methadoni hydrochloridum methadone hydrochloride chlorhydrate de méthadone	6-dimethylamino-4,4-diphenyl-heptanone hydrochloride chlorhydrate de diméthylamino-6 diphényl-4-4 heptanone
methamphetaminii chloridum methamphetaminium chloride chlorure de méthamphétaminium	(+) 1-phenyl-2-methylaminopropane hydrochloride chlorhydrate de (+) phényl-1 méthylamino-2 propane

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
methandriolum methandriol méthandriol	17α-methyl-3β, 17β-dihydroxyandrostene-5 méthyl-17α androstène-5 diol-3β, 17β
methanthelinii bromidum methanthelinium bromide bromure de méthanthélinium	β-diethylaminoethyl xanthene-9-carboxylate methylbromide bromométhylate de xanthène carboxylate-9 de (β-diéthylamino)-éthyle
methaphenilenum methaphenilene méthaphénilène	*N,N*-dimethyl-*N*-phenyl-*N*-(2-thienylmethyl) ethylenediamine *N,N*-diméthyl-*N*-phényl-*N* (méthyl-2 thiényl) éthylènediamine
methapyrilenum methapyrilene méthapyrilène	*N,N*-dimethyl-*N'*-(2-pyridyl)-*N'*-(2-thenyl) ethylenediamine *N,N*-diméthyl *N'*-(pyridyl-2) *N'*-(thényl-2) éthylène-diamine
metharbitalum metharbital métharbital	5,5-diethyl-1-methyl barbituric acid acide diéthyl-5,5 méthyl-1 barbiturique
methenaminii tetraiodidum methenaminium tetraiodide tétraiodure de méthénaminium	hexamethylenetetraminium tetraiodide tétraiodure d'hexaméthylène tétraminium
methenaminum methenamine méthénamine	hexamethylenetetramine hexaméthylène tétramine
methestroli dipropionas methestrol dipropionate dipropionate de méthestrol	4,4'-(1,2-diethylethylene)di-*o*-cresol dipropionate dipropionate de (diéthyl-1,2 éthylène)-4,4' di-*o*-crésol
methiodalum natricum methiodal sodium méthiodal sodique	sodium iodomethanesulfonate iodométhanesulfonate sodique
methoxyphenaminii chloridum methoxyphenaminium chloride chlorure de méthoxyphénaminium	2-(*o*-methoxyphenyl)-*iso*propylmethylaminium chloride chlorure de (*o*-méthoxyphényl)-2 *iso*propyl méthylaminium
methylbenzethonii chloridum methylbenzethonium chloride chlorure de méthylbenzéthonium	benzyldimethyl-2-[2-(*p*-1,1,3,3 -tetramethyl-butyl-cresoxy) ethoxy] ethylammonium chloride chlorure de benzyldiméthyl [(*p*-tétraméthyl-1,1,3,3 butylcrésoxy)-2 éthoxy]-2 éthylammonium
methylergometrinii tartras methylergometrinium tartrate tartrate de méthylergométrinium	D-lysergic acid 2-butanolamide tartrate tartrate de la butanolamide-2 de l'acide D-lysergique

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
methylphenobarbitalum methylphenobarbital méthylphénobarbital	*N*-methyl-5-ethyl-5-phenylbarbituric acid acide *N*-méthyl phényl-5 éthyl-5 barbiturique
methylrosanilinii chloridum methylrosanilinium chloridum chlorure de méthylrosanilinium	crystal violet violet cristallisé
methylthioninii chloridum methylthioninium chloride chlorure de méthylthioninium	tetramethylthioninium chloride chlorure de tétraméthylthioninium
methylthiouracilum methylthiouracil methylthiouracile	4-methyl-2-thiouracil méthyl-4 thio-uracile-2
metoponi hydrochloridum metopon hydrochloride chlorhydrate de métopon	7-methyldihydromorphinone hydrochloride chlorhydrate de méthyl-7 dihydromorphinone
monoaethanolaminii oleas monoethanolaminium oleate oléate de monoéthanolaminium	
nalorphinum nalorphine nalorphine	*N*-allylnormorphine *N*-allylnormorphine
naphazolinum naphazoline naphazoline	2-(1-naphthylmethyl) imidazoline (naphtyl-1 méthyl)-2 imidazoline
natrii ascorbas sodium ascorbate ascorbate de sodium	
natrii aurothiomalas sodium aurothiomalate aurothiomalate de sodium	mainly the sodium salt of aurothiomalic acid principalement le sel sodique de l'acide aurothiomalique
natrii cyclamas sodium cyclamate cyclamate de sodium	sodium cyclohexylsulfamate cyclohexylsulfamate de sodium
natrii dehydrocholas sodium dehydrocholate déhydrocholate de sodium	

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
natrii gentisas sodium gentisate gentisate de sodium	sodium 5-hydroxysalicylate hydroxy-5 salicylate de sodium
natrii morrhuas sodium morrhuate morrhuate de sodium	the sodium salts of the fatty acids of cod-liver oil les sels sodiques des acides gras de l'huile de foie de morue
natrii stibogluconas sodium stibogluconate stibogluconate de sodium	sodium antimonylgluconate antimonylgluconate de sodium
natrii tetradecylis sulfas sodium tetradecyl sulfate sulfate tétradécyl de sodium	sodium 7-ethyl-2-methylundecyl-4-sulfate éthyl-7 méthyl-2 undécyl sulfate-4 de sodium
neocinchophenum neocinchophen néocinchophène	ethyl 6-methyl-2-phenylquinoline-4-carboxylate méthyl-6 phényl-2 quinoléine carboxylate-4 d'éthyle
neomycinum neomycin néomycine	
nicopholinum nicopholine nicopholine	morpholine nicotinic acid amide amide nicotinique de la morpholine
nitrofuralum nitrofural nitrofural	5-nitro-2-furaldehyde semicarbazone nitro-5 furaldéhyde-2 semicarbazone
nitrosulfathiazolum nitrosulfathiazole nitrosulfathiazol	2-(*p*-nitrophenylsulfonamido) thiazole (*p*-nitrophénylsulfamido)-2 thiazol
noramidopyrinii methanosulfonas natricus noramidopyrinium methanesulfonate sodium méthanesulfonate sodique de noramidopyrinium	sodium methylaminophenyldimethyl-pyrazolone methanesulfonate méthyl amino phényl diméthyl pyrazolone méthane sulfonate de sodium
octamylaminum octamylamine octamylamine	amylaminomethylheptane amylamino méthyl heptane
oxapropanii iodidum oxapropanium iodide iodure d'oxapropanium	1-dimethylaminomethylene-2,3-dioxypropane iodomethylate iodométhylate de diméthylamino-1 méthylène dioxy-2,3 propane

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
oxophenarsini hydrochloridum oxophenarsine hydrochloride chlorhydrate d'oxyphénarsine	3-amino-4-hydroxy-phenyl arsenoxide hydrochloride chlorhydrate d'amino-3 hydroxy-4 phénylarsénoxyde
oxycodoni hydrochloridum oxycodone hydrochloride chlorhydrate d'oxycodone	dihydro-oxycodeinone hydrochloride chlorhydrate de dihydrooxycodéinone
oxydipentonii chloridum oxydipentonium chloride chlorure d'oxydipentonium	5,5′-bis(trimethylammonium) dipentyl ether dichloride dichlorure de l'éther dipentyl bis (triméthylammonium)-5,5′
oxyphenonii bromidum oxyphenonium bromide bromure d'oxyphénonium	diethyl-2(-hydroxyethyl)methylammonium bromide α-phenyl-α-cyclohexylglycolate α-phényl α-cyclohexyl glycolate du bromure du diéthyl (hydroxy-2 éthyl) méthyl ammonium
oxytetracyclinum oxytetracycline oxytétracycline	an antibiotic substance obtained from *Streptomyces rimosus* (terramycin) une substance antibiotique produite par *Streptomyces rimosus* (terramycine)
paramethadionum paramethadione paraméthadione	3,5-dimethyl-5-ethyloxazolidine-2,4-dione diméthyl-3,5 éthyl-5 oxazolidine dione-2,4
parathiazinum parathiazine parathiazine	pyrrolidine-ethylphenothiazine pyrrolidine éthyl phénothiazine
parethoxycainum parethoxycaine paréthoxycaïne	diethylaminoethanol 4-ethoxybenzoate éthoxy-4 benzoate de diéthylaminoéthanol
paroxypropionum paroxypropione paroxypropione	4-hydroxypropiophenone hydroxy-4 propiophénone
pentaerithrityli tetranitras pentaerithrityl tetranitrate tétranitrate de pentaérithrityle	
pentamethonium pentamethonium pentaméthonium	pentamethylene-1,5-bistrimethylammonium pentaméthylène bis-triméthylammonium-1,5
pentamidinum pentamidine pentamidine	*p′-p′*-diamidino-diphenoxy-pentane *p-p′*-diamidino-diphénoxy pentane

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
pentobarbitalum pentobarbital pentobarbital	5-ethyl-5-(1-methylbutyl) barbituric acid acide éthyl-5 (méthyl-1 butyl)-5 barbiturique
phenacemidum phenacemide phénacémide	phenylacetylurea phényl acétyl urée
phenadoxonum phenadoxone phénadoxone	6-morpholino-4,4-diphenylheptan-3-one morpholino-6 diphényl-4,4 heptanone-3
phenarsoni sulfoxylas phenarsone sulfoxylate sulfoxylate de phénarsone	sodium 3-amino-4-hydroxyphenylarsonate-*N*-methanal sulfoxylate amino-3 hydroxy-4 phénylarsonate *N*-méthanal sulfoxylate de sodium
phenicarbazidum phenicarbazide phénicarbazide	phenylsemicarbazide phénylsemicarbazide
phenindaminum phenindamine phénindamine	2-methyl-9-phenyl-2,3,4,9-tetrahydro-1-pyridindene hydrogen tartrate tartrate acide de méthyl-2 phényl-9 tétrahydro-2,3,4,9 pyridindène-1
pheniodolum natricum pheniodol sodium phéniodol sodique	sodium α-phenyl-β-(4-hydroxy-3,5-diiodophenyl) propionate α-phényl β-(hydroxy-4 diiodo-3,5 phényl) propionate de sodium
phenododecinium phenododecinium phénododécinium	dodecyldimethyl-2-phenoxyethylammonium dodécyl diméthyl phénoxy-2 éthyl ammonium
phenothiazinum phenothiazine phénothiazine	
phenpromethaminum phenpromethamine phenprométhamine	*N*,β-dimethylphenethylamine *N*,β-diméthyl phénéthylamine
phentolaminum phentolamine phentolamine	2-(*m*-hydroxy-*N*-*p*-tolylanilinomethyl)-2-imidazoline (*m*-hydroxy *N*-*p*-tolylanilino méthyl)-2 imidazoline-2
phenylbutazonum phenylbutazone phénylbutazone	3,5-dioxo-1,2-diphenyl-4-*n*-butylpyrazolidine dioxo-3,5 diphényl-1,2 *n*-butyl-4 pyrazolidine

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
phenylephrinum phenylephrine phényléphrine	1-methylaminomethyl-(3-hydroxyphenyl) carbinol méthylaminométhyl-1 (hydroxy-3 phényl) carbinol
pholcodinum pholcodine pholcodine	morpholinylethylmorphine morpholinyl éthyl morphine
pholedrinii sulfas pholedrinium sulfate sulfate de pholédrinium	β-(*p*-hydroxyphenyl) *iso*propylmethylammonium sulfate sulfate de β-(*p*-hydroxyphényl) *iso*propylméthylammonium
phthalylsulfathiazolum phthalylsulfathiazole phthalylsulfathiazol	(*o*-carboxybenzoyl)-*p*-aminophenyl-sulfonamido-thiazole (*o*-carboxy benzoyl) *p*-amino phényl sulfamidothiazol
phytomenadionum phytomenadione phytoménadione	2-méthyl-3-phytyl-1,4-naphthoquinone (vitamin K_1) méthyl-2 phytyl-3 naphtoquinone-1,4 (vitamine K_1)
piperocainii chloridum piperocainium chloride chlorure de pipérocaïnium	3-benzoxy-1-(2-methylpiperidino) propane hydrochloride chlorhydrate de benzoxy-3 (méthyl-2 pipéridino)-1 propane
piperoxani hydrochloridum piperoxan hydrochloride chlorhydrate de pipéroxane	2-(1-piperidylmethyl)1,4-benzodioxan hydrochloride chlorhydrate de (pipéridylméthyl-1)-2 benzodioxane-1,4
piridocainum piridocaine piridocaïne	β-(2-piperidyl) ethyl *o*-aminobenzoate *o*-aminobenzoate de β-(pipéridyl-2) éthyle
polyvidonum polyvidone polyvidone	polyvinylpyrrolidone polyvinyl pyrrolidone
pregnenolonum pregnenolone prégnénolone	3-hydroxy-20-keto-pregnene-5 hydroxy-3 céto-20 prégnène-5
primaquinum primaquine primaquine	8-(4-amino-1-methylbutylamino)-6-methoxyquinoline (amino-4 méthyl-1 butylamino)-8 méthoxy-6 quinoléine
probarbitalum natricum probarbital sodium probarbital sodique	sodium derivative of 5-ethyl-5-*iso*propylbarbituric acid dérivé sodique de l'acide éthyl-5 *iso*propyl-5 barbiturique

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
procainamidum procainamide procaïnamide	4-amino-(2-diethylaminoethyl) benzamide amino-4 (diéthyl-2 aminoéthyl) benzamide
procyclidinum procyclidine procyclidine	1-phenyl-1-*cyclo*hexyl-3-pyrrolidino-propan-1-ol hydrochloride chlorhydrate de phényl-1 *cyclo*hexyl-1 pyrrolidine-3 propanol-1
profenamini hydrochloridum profenamine hydrochloride chlorhydrate de profénamine	*N*-(diethylaminopropyl)dibenzoparathiazine hydrochloride chlorhydrate de (diéthylamino-propyl)-N-thiodiphénylamine
proflavinum proflavine proflavine	3,6-diaminoacridine diamino-3,6 acridine
promethazini hydrochloridum promethazine hydrochloride chlorhydrate de prométhazine	(dimethylamino-2′-methyl-2′ethyl)-*N*-dibenzoparathiazine hydrochloride chlorhydrate de [(diméthylamino-2′ méthyl-2′) éthyl] N-thiodiphénylamine
propamidinum propamidine propamidine	α,ω-(4,4′-diamidinodiphenoxy) propane α,ω-(diamidino-4,4′ diphénoxy) propane
propanthelini bromidum propantheline bromide bromure de propanthéline	β-di*iso*propylaminoethyl xanthene-9-carboxylate methylbromide bromométhylate de xanthène carboxylate-9 de β-di*iso*propylaminoéthyle
propyliodonum propyliodone propyliodone	propyl-3,5-diiodo-4-pyridone acetate acétate de propyl diiodo-3,5 pyridone-4
propylthiouracilum propylthiouracil propylthio-uracile	2-mercapto-4-hydroxy-6-*n*-propylpyrimidine propyl-6 thio-uracil-2
propyphenazonum propyphenazone propyphénazone	1-phenyl-2,3-dimethyl-4-isopropyl-5-pyrazolone phényl-1 diméthyl-2,3 isopropyl-4 pyrazolone-5
pyridoxinii chloridum pyridoxinium chloride chlorure de pyridoxinium	4,5-di(hydroxymethyl)-3-hydroxy-2-methyl-pyridinium chloride chlorure de dihydroxyméthyl-4,5 hydroxy-3 méthyl-2 pyridinium
pyrimethaminum pyrimethamine pyriméthamine	2,4-diamino-5-*p*-chlorophenyl-6-ethylpyrimidine diamino-2,4 *p*-chlorophényl-5 éthyl-6 pyrimidine

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
pyroxylinum pyroxylin pyroxyline	soluble guncotton fulmicoton
racemethorphanum racemethorphan racéméthorphane	(±) 3-methoxy-*N*-methylmorphinan (±) méthoxy-3 *N*-méthylmorphinane
racemorphanum racemorphan racémorphane	(±) 3-hydroxy-*N*-methylmorphinan (±) hydroxy-3 *N*-méthylmorphinane
rutosidum rutoside rutoside	3-rhamnoglucoside of 5,7,3′,4′-tetrahydroxy-flavonol rhamnoglucoside-3 de tétrahydroxy-5,7,3′,4′ flavonol
salacetamidum salacetamide salacétamide	*N*-acetylsalicylamide *N*-acétyl salicylamide
salazosulfamidum salazosulfamide salazosulfamide	*p*-sulfonamidophenylazosalicylic acid acide *p*-sulfamido phénylazosalicylique
salazosulfapyridinum salazosulfapyridine salazosulfapyridine	4-(2-pyridylamidosulfonyl) 3-carboxy-4′-oxyazobenzene (pyridyl-2 amidosulfonyl)-4 carboxy-3 oxy-4′ azobenzène
salazosulfathiazolum salazosulfathiazole salazosulfathiazol	*p*-aminophenylsulfonamidothiazole-azosalicylic acid acide *p*-amino phényl sulfamidothiazol azosalicylique
salicylamidum salicylamide salicylamide	2-hydroxybenzamide hydroxy-2 benzamide
secretinum secretin sécrétine	hormone of the duodenal mucosa which activates the pancreatic secretion and lowers the blood-sugar level hormone de la muqueuse duodénale à action sécrétoire pancréatique et hypoglycémiante
solutio natrii chloridi composita compound solution of sodium chloride soluté de chlorure de sodium composé	synonym : Ringer's solution synonyme : solution de Ringer

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
solutio natrii lactatis composita compound solution of sodium lactate soluté de lactate de sodium composé	synonym : Ringer's lactate solution synonyme : solution de Ringer lactée
stearylsulfamidum stearylsulfamide stéarylsulfamide	stearylsulfanilamide stéarylsulfanilamide
stibamini glucosidum stibamine glucoside stibamine glucoside	*N*-glucoside of sodium 4-aminophenylstibonate *N*-glucoside d'amino-4 phényl stibonate de sodium
stibosaminum stibosamine stibosamine	diethylamine *p*-aminophenylantimonate *p*-aminophényl stibinate de diéthylamine
streptomycinum streptomycin streptomycine	
subathizonum subathizone subathizone	4-ethylsulfonylbenzaldehyde thiosemicarbazone thiosemicarbazone d'éthylsulfonyl-4 benzaldéhyde
sulfacetamidum sulfacetamide sulfacétamide	*p*-aminophenylsulfonacetamide *p*-aminophényl sulfonylacétamide
sulfachrysoidinum sulfachrysoidine sulfachrysoïdine	diaminosulfonamidocarboxyazobenzene diaminosulfamido carboxyazobenzène
sulfadiasulfonum natricum sulfadiasulfone sodium sulfadiasulfone sodique	sodium *N*-acetyl-2-sulfamyl-4,4′-diphenyl sulfone sodium *N*-acétyl sulfamyl-2 diamino-4,4′ diphényl sulfone
sulfadimidinum sulfadimidine sulfadimidine	2-sulfanilamido-4,6-dimethylpyrimidine diméthyl-4,6 sulfanilamido-2 pyrimidine
sulfafurazolum sulfafurazole sulfafurazol	5-*p*-aminophenyl sulfonamido-3,4-dimethylisoxazole *p*-amino phényl sulfamido-5 diméthyl-3,4 isoxazol
sulfamethizolum sulfamethizole sulfaméthizol	5-sulfanilamido-2-methyl-1,3,4-thiodiazole sulfanilamido-5 méthyl-2 thiodiazol-1,3,4

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
sulfapyridinum sulfapyridine sulfapyridine	2-sulfanilamidopyridine sulfanilamido-2 pyridine
sulfathiourea sulfathiourea sulfathio-urée	*p*-aminophenylsulfonylthiourea *p*-aminophényl sulfonyl thio-urée
sulfisomidinum sulfisomidine sulfisomidine	2,4-dimethyl-6-sulfanilamidopyrimidine diméthyl-2,4 sulfanilamido-6 pyrimidine
sulfogaiacolum sulfogaiacol sulfogaïacol	potassium guaiacolsulfonate gaïacolsulfonate de potassium
suraminum natricum suramin sodium suramine sodique	symmetrical urea of the sodium salt of *m*-benzoyl-*m*-amino-*p*-methylbenzoyl-1-aminonaphthalene 4,6,8-trisulfonic acid urée symétrique du *m*-aminobenzoyl *m*-amino *p*-méthylbenzoyl 1-naphtylamino 4,6,8-trisulfonate de sodium
suxamethonii chloridum suxamethonium chloride chlorure de suxaméthonium	bis-(2-dimethylaminoethyl) succinate bismethochloride diméthochlorure de succinate de bis-(diméthylamino-2 éthyle)
suxethonii chloridum suxethonium chloride chlorure de suxéthonium	bis-(2-dimethylaminoethyl) succinate bisethochloride diéthochlorure de succinate de bis-(diméthylamino-2 éthyle)
tetrylammonii bromidum tetrylammonium bromide bromure de tétrylammonium	tetraethylammonium bromide bromure de tétraéthylammonium
thiacetarsamidum natricum thiacetarsamide sodium thiacétarsamide sodique	disodium salt of *p*-[bis-(carboxymethyl-mercapto) arsino] benzamide sel disodique de *p*-[bis-(carboxy méthyl mercapto) arsino] benzamide
thiamazolum thiamazole thiamazole	1-methyl-2-mercaptoimidazole méthyl-1 mercapto-2 imidazole
thiazosulfonum thiazosulfone thiazosulfone	2,4′-diaminothiazolylphenylsulfone diamino-2,4′ thiazolyl phényl sulfone
thioacetazonum thioacetazone thioacétazone	4-acetamidobenzaldehyde thiosemicarbazone acétamido-4 benzaldéhyde thiosemicarbazone

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
thiodiglycolum thiodiglycol thiodiglycol	2,2′-dihydroxyethyl sulfide sulfure de dihydroxyéthyle-2,2′
thiomersalum thiomersal thiomersal	sodium ethylmercurithiosalicylate éthylmercuri thiosalicylate de sodium
thonzylaminii chloridum thonzylaminium chloride chlorure de thonzylaminium	*N,N*-dimethyl-*N′*-(*p*-methoxybenzyl)-*N′*-(2-pyrimidyl) ethylenediamine hydrochloride chlorhydrate de *N,N*-diméthyl *N′*-(*p*-méthoxybenzyl) *N′*-(pyrimidyl-2) éthylènediamine
tocamphylum tocamphyl tocamphyl	diethanolamine salt of tolylmethyl carbinol mono-D-camphoric acid ester sel de diéthanolamine de l'ester mono-D-camphorique de tolylméthyl carbinol
tolazolinum tolazoline tolazoline	2-benzylimidazoline benzyl-2 imidazoline
trichloroethylenum trichlorethylene trichloréthylène	
trihexyphenidyli hydrochloridum trihexyphenidyl hydrochloride chlorhydrate de trihexyphénidyle	1-cyclohexyl-1-phenyl-3-piperidino-1-propanol hydrochloride chlorhydrate de cyclohexyl-1 phényl-1 pipéridino-3 propanol-1
trimethadionum trimethadione triméthadione	3,5,5-trimethyloxazolidine-2,4-dione triméthyl-3,5,5 oxazolidine dione-2,4
tripelennamini hydrochloridum tripelennamine hydrochloride chlorhydrate de tripélennamine	*N*-benzyl-*N′*, *N′*-dimethyl-*N*-2-pyridyl-ethylenediamine hydrochloride chlorhydrate de benzyl-(α-pyridyl) diméthyléthylènediamine
tuaminoheptanum tuaminoheptane tuaminoheptane	1-methylhexylamine méthyl-1 hexylamine
tubocurarini chloridum tubocurarine chloride chlorure de tubocurarine	D-tubocurarine chloride chlorure de D-tubocurarine
tyrothricinum tyrothricin tyrothricine	

International Non-proprietary Name (Latin, English, French)	*Chemical Name or Description* (English, French)
urethanum urethane uréthane	ethyl carbamate carbamate d'éthyle
vanyldisulfamidum vanyldisulfamide vanyldisulfamide	4′-oxy-5′-methoxy-1-benzylidene-bis-(aminophenyl-sulfonamide) oxy-4′ méthoxy-5′ benzylidène-1-bis (aminophényl-sulfamide)
vinbarbitalum vinbarbital vinbarbital	sodium derivative of 5-ethyl-5-(1-methyl-1-butenyl) barbituric acid dérivé sodique de l'acide éthyl-5 (méthyl-1 buténYl-1) -5 barbiturique

Comments on, or formal objections to, any of the above names may be filed within a period of six months from 1 November 1953, and should be forwarded to :

The Director-General
World Health Organization
Palais des Nations
Geneva
Switzerland